THE RELATIONSHIP BETWEEN VOCATIONAL CHOICE AND SELECTED ATTITUDES HELD BY LOW-ABILITY STUDENTS

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To My Family

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CHAPTER I

INTRODUCTION

The community junior college movement in the United States has experienced considerable development in recent years. Significant growth is apparent in the enrollments of existing community junior colleges as well as in the establishment of new institutions.

The American Association of Junior Colleges reports that, in 1950, there were 579,475 students enrolled in 597 community junior colleges.[1] Ten years later, the figures indicate that there were 816,071 students enrolled in 663 institutions.[2] The same Association reports that, in 1966, there were 837 community junior colleges enrolling 1,464,099 students.[3] According to Gleazer, "The annual rate of increase in enrollments now is about 20 per cent and is accelerating."[4] Gleazer predicts that, by 1975, there will be more than 1,000 community junior colleges enrolling as many as 6,500,000 students.[5]

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[1] Edmund J. Gleazer, Jr., (editor), 1961 Junior College Directory (Washington: American Association of Junior Colleges, 1961), p. 40.

[2] Ibid., p. 40.

[3] William A. Harper (editor), 1967 Junior College Directory (Washington: American Association of Junior Colleges, 1967), p. 60.

[4] Edmund J. Gleazer, Jr., "AAJC Approach--Toward Universal Higher Education," Junior College Journal, XXXVII (November, 1966), p. 7.

[5] Ibid.

This growth in community junior college enrollments may be considered a result of an attempt by American Education to establish a system of universal higher education.

In discussing this direction of higher education, Gleazer states:

> Universal educational opportunity for at least two years beyond high school is a subject of mounting interest in this country.
>
> Interestingly, it seems the question is no longer "whether or not" it will be achieved. Now the question is "when?"
>
> I would say the answer is "soon--sooner than many people realize."[1]

No longer are the students enrolled in institutions of higher education easily characterized by similar social or educational backgrounds. There are currently great numbers of students seeking higher education because the local community junior college offers such an opportunity. As a result of this increase in community junior college enrollments, there is an increasing emergence of a college student population which differs considerably from traditional college student groups. In describing some characteristics of community junior college students, McDaniel states:

1. They represent a cross-section of the community served by the college.

2. They are a mixture of full-time and part-time students with a very large number working while attending college.

3. Two-thirds state as their intentions to transfer to a senior college while one-third plan an organized occupational program.

4. Since most of their parents lack college training, knowledge of, and critical judgment about college courses and college activities are low among students, thus many express fanciful choices dictated more by status values than by real interests.

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[1] Ibid.

5. They come from each sub-culture of American society.

6. They represent a wide range of ability and achievement.[1]

Medsker identifies eight types of community junior college students in the following way:

1. The high school graduate of moderate ability and achievement who enters junior college right after high school as a full-time student with the intention of transferring to a given institution with a particular major;

2. The low achiever in high school who "discovers" college quite late and then becomes highly motivated to enroll in a junior college transfer program for which he is not equipped, yet who may be a "late bloomer";

3. The high school graduate of low ability who enters junior college because of social pressures or because he cannot find employment;

4. The very bright high school graduate who could have been admitted to a major university who may have low scores on measures of "intellectual disposition" and "social maturity";

5. The intellectually capable but unmotivated, disinterested high school graduate who comes to a junior college to "explore", hoping it will offer him what he does not know he is looking for;

6. The transfer (in) from a four-year college who either failed or withdrew after an unsatisfactory experience in a semester, a year, or more;

7. The high school drop-out who probably comes from a minority and a culturally disadvantaged family with only grade-school level skills and a strong interest in securing vocational training;

8. The late college entrant (over 25) who was employed, in military service, or in the home for a number of years after high school and who is now motivated to pursue an associate (and perhaps a baccalaureate) degree, however long it may take.[2]

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[1] J. W. McDaniel, Essential STUDENT PERSONNEL PRACTICES for Junior Colleges (Washington: American Association of Junior Colleges, 1962).

[2] Leland L. Medsker, "The Junior College Student." Junior College Student Personnel Programs--Appraisal & Development--A Report to the Carnegie Corporation (November, 1965), pp. 21-22.

There are many students currently enrolled in community junior colleges who, a few years ago, would not have considered continuing their education beyond high school. It seems reasonable to expect that the greatest increase will continue to be in the number of low-ability students applying for admission to community junior colleges. The reasons for this include:

1. The nation will experience a natural increase in population from which there will be a proportional increase in the number of low-ability students.

2. An increasing number of private colleges and universities are requiring higher levels of ability, and are generally supporting a policy of selective admission. As a consequence, public community junior colleges will receive a greater number of low-ability applicants who are likely to be denied admission elsewhere.

3. The pressures extended by family and society on high school graduates to go to college have caused the concept of the need to "go to college" to become commonplace in our culture. Thus, the low-ability student is being influenced to go to college more now than ever before.

It has been reported by McDaniel that, of entering junior college students, two-thirds hope to transfer to a senior college, but fully half will be enrolled in college for no longer than one year.[1] The attrition indicated by this fact suggests that junior colleges are failing to meet the educational needs of a great many students.

In an attempt to meet this problem, it is becoming commonplace to offer compensatory education as a legitimate aspect of public education, and attempt to provide special courses and curricula to meet the needs of the low-ability student.

Compensatory education in the community junior colleges appears to be the most prevalent attempt to solve the problem of dealing with

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[1] J. W. McDaniel, Essential STUDENT PERSONNEL PRACTICES for Junior Colleges (Washington: American Association of Junior Colleges, 1962).

the low-ability student. Junior colleges have long had remedial courses as part of the regular college curriculum. Follow-up studies on these students, however, indicate that a low percentage actually succeed in a college transfer curriculum.[1] For many of these students, a more appropriate goal would lie, not in compensatory education where an attempt was made to prepare them for a normal college curriculum, but rather to direct their attention toward more suitable educational or vocational goals. This specially designed curriculum should have as its goal to help the academically handicapped student aspire to an educational or vocational goal commensurate with his abilities or identified through self-understanding.

The underlying premise of such a program is the idea that significant changes in orientation come about more effectively from a student's insight into his own abilities and interests rather than from primarily external evaluation and stimulus. Consequently, the program must be designed toward the student's exploration of himself, examining such things as his limitations and strengths and appropriate fields of endeavor that will satisfy his interests and needs.

It may be possible, in this way, for the student to partially escape the social expectations and pressures which have forced him toward a goal which may be highly unrealistic for him.

In the fall of 1965, Daytona Beach Junior College, a public institution in Daytona Beach, Florida, instituted a Guided Studies Program in an attempt to achieve this goal of reorientation of educational aims for the low-ability student. It was an experimental program designed

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[1]Richard C. Richardson and Paul A. Elsner, "General Education for the Disadvantaged," Junior College Journal, XXXVI (December, 1965-January, 1966).

to assist the low-ability high school graduate who was seeking admission to a college degree program, and whose academic and test profile suggested he would be unable to compete with the average college population, in a degree program, to arrive at more realistic self-direction. This student often can, and does, succeed in a vocational-technical program of studies. This may represent an opportunity to provide him with the means of obtaining a satisfactory standard of living for himself and his family.

It is readily apparent that a lack of academic credentials does not disqualify the low-ability high school graduate from successful performance in vocational-technical programs. The conclusion may not be obvious, however, to the student or to his family, for his ambition and that of his family often include "a college education" in the belief that the latter is necessary for a successful career. Poor high school grades, low test scores, and accompanying academic difficulties may have dampened his scholastic expectations, but his hopes remain high that he can complete the required course of studies in a transfer program, despite his demonstrated academic limitations. As the experience of many junior college counselors has shown, this student may register as a pre-engineering, pre-medical, or pre-law student, etc., only to flounder for a couple of semesters and then drop out of college as he becomes discouraged by his additional failures, or as college regulations require that he be dropped. In addition, the history of his academic difficulties follows him via his academic transcript for life.

In dropping out of a program of studies to which he is unsuited, the student frequently makes a realistic evaluation of his academic capabilities. But, if he leaves permanently, he may not achieve full

realization of his actual capabilities or may never be made aware that he might achieve a successful career in a more suitable program. Such drop-outs are a loss to the economy of the state in terms of the skilled labor market.

An attempt was made then, in the institution of the Guided Studies Program, to prevent this loss by placement of the low-ability student in a situation which would focus his attention toward a more appropriate post-high school educational program.

In placing students in this program, it is valuable to have some indication of which students are likely to respond to a specific approach in meeting the goals of the program. Unrealistic and inaccurate attitudes and information may be the basis for their unrealistic motivation. These sets of attitudes are also manifestations of current social expectations and pressures. If individual behavior is related to noncognitive aspects of a person's personality, the attitudes held by these students may be closely related to their patterns of response in a situation such as the Guided Studies Program.

Purpose of the Study

In the fall of 1965, Daytona Beach Junior College adopted a Guided Studies Program (Appendix A). It was apparent at the outset that there was a need for research to examine the effectiveness of the program. It seemed appropriate and important to attempt to understand the characteristics of the low-ability students and to establish some predictive basis for success. Success in this program is interpreted to mean that the student has responded in a positive way to the experience. A positive response is interpreted to be a change in the student's choice of

a vocational goal--a change that represents the acceptance of a goal in which he has a reasonable opportunity to succeed.

Since the students enrolled in this program represented only those who placed in the lower one-third in achievement and ability and who insisted that they enroll in a pre-professional curriculum, an attempt was made to examine the attitudes held by these students which related to the cultural tone of today as it relates to a "college education." It was felt that the attitudes held by these students represented one of the noncognitive areas which might be functionally related to the success criterion.

There were two purposes of the study. First, it represented an opportunity to examine the attitudes and measured changes in attitude intensity of those students who held unrealistic feelings about themselves. Second, an attempt was made to relate these attitudes to subsequent behavior following exposure to the program. This represents further examination into methods of dealing with the low-ability student.

An attempt was made to answer the following questions:

1. Do attitudes differ at the outset between those low-ability students who are considered successful and those who are labeled unsuccessful?

2. Does the total group experience a change in attitudes as a result of their experience in the Guided Studies Program?

3. Do the subgroups (sex, race) experience a different change in attitudes as a result of their experience in the Guided Studies Program?

4. Do successful and unsuccessful students experience different changes in attitudes?

Answers to these questions would assist junior colleges in designing special curricula according to the needs of the students--needs which may be identified in the examination of these questions.

Such topics as homogeneous grouping, appropriateness of tests being used, and the need for further research into the use of noncognitive measures in the prediction of success may be considered in terms of the outcome of the study.

CHAPTER II

REVIEW OF RELATED RESEARCH

In this chapter literature and research directly related to this study are reviewed. The chapter includes descriptions of the most commonly used approaches in meeting the needs of low-ability students, criticisms of the techniques cited, and the need for a new approach.

Prevailing Practices of Meeting the Needs of the Low-Ability Student

Current research indicates the proportions of the problem faced by junior colleges as they attempt to meet the educational needs of their students.

Medsker, in discussing the responsibility of the community junior college to ". . . perform a 'salvaging' function," states:

> Its task, then, becomes one of assisting many students in attaining realistic goals that are closed to them at high school graduation. This responsibility weighs heavily on the junior college, regardless of the student's declared intentions.[1]

Medsker describes the attempts of community junior colleges to perform the "salvaging" function in reporting his findings in an examination of 243 institutions.

> Inquiry into the methods of how junior colleges were assisting students to improve their skills in reading, writing, speaking, and mathematics showed a wide range of practices.

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[1] Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill Book Company, Inc., 1960), p. 64.

> All institutions recognized the problem and more than three-fourths of them were attempting to meet it. Two types of programs are commonly referred to as "remedial." One is the course which runs for a full term, that is, a semester or quarter. It may be a course taken instead of a standard college course in the same subject. For example, students who do not qualify for the standard freshman English course may be enrolled in "English X." In some colleges, two levels of the "sub" courses had been established. This type of course may also be designed to improve a specific skill, such as the reading rate and comprehension, and is not regarded as a substitute for another course. A second type of remedial course is in the nature of a workshop or special help class to which students are assigned to improve their skill and supplement their work in a regular course that they are carrying concurrently.[1]

Schenz surveyed what is being done for the "low-ability" student in both public and private community junior colleges. This report represented a systematic indication of the current practices of the institutions reporting and included the following significant findings:

1. The survey noted the exceptionally high number of institutions reporting (78%), and particularly, the interest and response to the question "what should be done?"

2. While private junior colleges are generally supporting a policy of selective admission, the vast majority of public junior colleges are maintaining and supporting an "open door" policy.

3. Junior colleges are offering a variety of curricula and methods of curriculum practices; among them are reduced load, probationary admissions, remedial courses, special curricula, homogeneous grouping, specialized counseling services and testing and orientation classes with counselors as instructors.

> As junior college enrollments grow and urbanization continues, the larger metropolitan areas of our country must--unless admission policies in public junior colleges are drastically changed--face the reality of the enrollment of larger and larger numbers of students with low ability.[2]

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[1] Ibid., p. 65.

[2] Robert F. Schenz, "What is Being Done for Low-Ability Students?" Junior College Journal, XXXIV (May, 1964).

On the basis of his investigation, Schenz offers the following conclusions:

1. The remedial function is accepted by the administrators of junior colleges as a legitimate function of these institutions.

2. Administrators of junior colleges accept the responsibility of providing courses and curriculum to meet the needs of students with low ability.

3. Emerging throughout the nation is an awareness by junior college administrators of the problem of meeting the needs of students with low ability.[1]

In 1960-61, an exploratory approach called "Operation Second Chance" was undertaken by the Bronx Community College, under the sponsorship of the Ford Foundation. This project explored, among other questions, the extent to which a specially designed program would help the educationally or culturally deprived student. While these researchers report their numbers too small to be statistically significant, they believe their findings and recommendations to have been significant for other exploratory and developmental programs. Some significant follow-up findings are as follows:

1. Two-thirds of the students were able to continue a higher educational program.

2. Test scores and high school grades may not reflect the potential of the student.

3. Evidence of unreleased academic potential emerged when an opportunity was given to overcome previous deprivations.

4. Highly motivated students achieved dramatic jumps in scholastic achievement.

5. Positive changes were noted in attitude as observed in case histories and anecdotal records.

6. Some students, despite diligent work and sympathetic guidance, did not improve, but the program was deemed

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[1] Ibid., p. 27.

worthwhile because many of these students recognized and conceded that further education of the type experienced is unwise or inappropriate.

7. The expressed career ambitions of many of the students are frequently quite unrealistic. The program was successful in that many students developed more objective views of their capabilities.

8. Skill-improvement activities were more highly motivated when closely related to the content of college-level courses.[1]

The authors of "Operation Second Chance" noted that increasing numbers of students who come from lower social strata, many of them from the culturally deprived school or neighborhood, will be coming to college. They cite as a significant note that the academically handicapped are handicapped for many reasons and that one of the essential goals of a specially designed program for these students should be an attempt to discover the underlying cause or causes.

Richardson and Elsner classify practices of meeting the needs of low-ability students into three basic categories. The first, and according to the authors the most common, is the ". . . piecemeal offering of remedial or developmental courses."[2] The purpose of this approach is to repair achievement deficiencies by remedial instruction in such areas as English, mathematics, and reading. The success criterion in this approach is considered to be the student's ability to succeed in normal college level courses, following the successful completion of remedial instruction.

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[1] Morris Meister et al., "Operation Second Chance," Junior College Journal, XXX (October, 1962).

[2] Richard C. Richardson and Paul A. Elsner, "General Education for the Disadvantaged," Junior College Journal, XXXVI (December, 1965-January, 1966), p. 18.

A second approach is reported as being ". . . a unified program of remedial courses of one or two semesters in length."[1] The basic difference between the piecemeal remedial approach and the unified program of remedial courses lies in the fact that the latter is augmented by intensive counseling procedures. The success criterion in this approach is, again, the student's ability to succeed in normal college level courses at a later date.

A limited number of community junior colleges are taking a third approach. The authors point out that this approach has evolved from the remedial concept. The emphasis here is the preparation of students for entrance into an occupation. There is reason to consider this approach realistic for students who do not possess the qualifications required for entrance into the normal college level program.

Criticisms of Prevailing Practices of Meeting the Needs of the Low-Ability Student

While Schenz found wide acceptance of remedial instruction, he suggests that such programs are not meeting the needs of the low-ability student effectively.

> There is a strong suggestion that the special remedial courses designed only for students with low ability are not restricted to such students. In fact, the regular remedial courses of the junior colleges seem to be the main curricular offering that is available to students with low ability and, in many cases, these courses may be too difficult for such students.[2]

In commenting on what was previously referred to as the piecemeal offering of remedial or developmental courses, Richardson and Elsner state:

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[1] Ibid., p. 19.

[2] Robert F. Schenz, "What is Being Done for Low-Ability Students?" Junior College Journal, XXXIV (May, 1964), p. 26.

> The fragmented remedial approach suffers from a number of serious weaknesses. Although homogeneous grouping may improve the quality of transfer education, no one has seriously asserted that such an approach will permit junior colleges to accomplish in one semester what public schools have failed to attain in twelve years. It would be possible to criticize in considerable detail certain assumptions that underlie the offering of isolated developmental courses in the guise of meeting the needs of the disadvantaged student.[1]

In criticizing the approach referred to as a unified program of remedial courses, the same authors say:

> Even where well-conceived and effectively administered, this approach, too, has certain limitations. By establishing as its objective the improvement of student capacities for doing college level work, it automatically dooms to failure as many as three of every four who enter the program.[2]

In a more general analysis of existing remedial programs, Richardson and Elsner criticize them by presenting the following observations:

1. Remedial courses do not meet the needs of the educationally disadvantaged, a group that comprise one-third or more of the entering classes of many open door urban community colleges. As a corollary, selection for remedial type courses should be done as carefully as for the most demanding associate degree programs. If remedial courses are to have any chance of success, they must utilize specially trained instructors and cannot become the dumping grounds for a bewildering array of students not wanted in more academically respectable courses.

2. Technical and vocational courses most frequently do not attract the educationally disadvantaged student. Further, even if some method existed for directing disadvantaged students into these areas, most would not be able to meet the minimum level of performance demanded by the program.

3. Open door colleges must and do practice selective admissions with respect to the programs that they offer. Students with serious educational disabilities cannot profit from demanding courses at the technical and transfer level. Their presence

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[1] Richard C. Richardson and Paul A. Elsner, "General Education for the Disadvantaged," Junior College Journal, XXXVI (December, 1965-January, 1966), p. 19.

[2] Ibid.

in such courses affects classroom progress and could constitute a deterrent to instructor morale.

4. The educationally disadvantaged student is coming to the open door community college in ever-increasing numbers. The recent trend toward increased college attendance by students falling below predetermined indexes of success criteria has probably resulted from (1) colleges and universities reaching into a wider range of social class structures for its students, (2) the need for higher level vocational and professional training on the part of an expanding future working force, and (3) the emerging of a more comprehensive strata of collegiate institutions, such as the public junior college.

   More recently, belated consideration is being given to the ethics of using the community college as a one-semester sieve. It appears likely that disadvantaged students will be present at least one semester and in many instances a full year. The question, then, becomes not whether such students will be educated but rather how they can best be educated.[1]

In levelling what might be the most revealing criticism, Medsker describes the case for the junior college as being based on the claim that it meets appropriately the needs of many students who will not transfer to a four-year institution. But, he continues, the evidence indicates that it is the higher-ability student who graduates from the two-year occupational program, and it is the lower-ability student who tends to drop out of school.[2] Yet, according to Nall, it is this very student who should and could profit by enrolling in the occupational programs offered by the community college.[3]

It may be suggested by these criticisms that remedial education, as the type cited, may be helping the academic under-achiever while by-passing the low-ability student.

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[1] Reid., pp. 19-20.

[2] Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill Book Company, Inc., 1960).

[3] Alfred W. Nall, "What About 'Terminal' General Education in the Junior Colleges," Junior College Journal, XXXIII (September, 1962).

The Need for a New Approach

While it is hazardous to assume that the majority of early college drop-outs leave school because of inadequate educational preparation,[1] there is general agreement that deficient educational background is at least one of the causal factors.[2] As suggested, it would seem logical that these students would be promising candidates for occupational programs. A most interesting question, then, becomes: what prevents the academically handicapped student from choosing a more suitable post-high school education program?

The answer to this question could only be revealed completely by intensive depth analyses of these students, since these students can only verbalize certain vague reasons for their vocational choice.[3, 4, 5] Choice of vocational goals may be influenced by family connections,[6] by emotional needs[7] or merely by accident.[8] Some indications and answers,

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[1] James W. Thornton, The Community Junior College (New York: John Wiley and Sons, Inc., 1960).

[2] Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill Book Company, Inc., 1960).

[3] Lionel R. Olsen, "Junior College Students' Reasons for Occupational Choice," Junior College Journal, XXX (March, 1960).

[4] George A. Pierson, Counselor Education in Regular Session Institutes, The NDEA Counseling and Guidance Institutes Program. U. S. Department of Health, Education and Welfare, Office of Education (Washington: Government Printing Office, 1965).

[5] D. E. Super and P. H. Overstreet, "The Vocational Maturity of Ninth Grade Boys," Career Pattern Study Monograph 2, Bureau of Publications, Teachers College (New York: Columbia University Press, 1960).

[6] T. Caplow, The Sociology of Work (Minneapolis: The University of Minnesota Press, 1954).

[7] B. R. Forer, "Personality Factors in Occupational Choice," Educational and Psychological Measurements, XIII (Autumn, 1953).

[8] E. S. Ginzberg, et al., Occupational Choice: An Approach to a General Theory (New York: Columbia University Press, 1951).

however, have been offered by psychologists, educators and sociologists as they have considered this problem.

The lower-ability student has been found to be more rigid and stereotyped in his thinking. While Goldstein was probably the first person to equate one aspect of intelligence with adaptability,[1] it has since become accepted as parts of several tests of mental ability.[2] As Goldstein expressed it, the more the so-called organic factors come into the foreground (brain damage, low intelligence, etc.), the less adaptable the organism becomes. If such is the case, the low-ability student who meets with frustration in his attempt to secure a college degree has difficulty in adjusting to other and more appropriate vocational goals.

The student is often under environmental pressure to persist in attaining an academic degree both by the family's insistence and the social status a college degree suggests. While Hollingshead found that the lower class youth did not aspire to a college education,[3] others have reported that the blue-collar working and culturally deprived minorities look upon college as an "escape route" for their children.[4, 5, 6]

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[1]Kurt Goldstein, Human Nature on the Height of Psychopathology (Cambridge: Howard University Press, 1940).

[2]David Wechsler, The Measurement and Appraisal of Adult Intelligence (4th ed.; Baltimore: The Williams & Wilkins Company, 1958).

[3]A. B. Hollingshead, Elmtown's Youth (New York: John Wiley & Sons, Inc., 1949).

[4]Ely Chinoy, Automobile Workers and the American Dream (New York: Doubleday and Co., Inc., 1955).

[5]J. Kenneth Morland, "Kent Revisited: Blue-Collar Aspirations and Achievement," in A. B. Shostak and W. Gomberg (Eds.) Blue-Collar World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964).

[6]Theodore V. Purcell, "The Hopes of Negro Workers for Their Children," in A. B. Shostak and W. Gomberg (Eds.) Blue-Collar World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964).

It is hardly surprising that this is so. The American ideals hold up for the underprivileged class the hope that their children can rise to higher class ranks.[1, 2] Unless educators can help the academically handicapped student over a period of time by psychological and educational support, he may not be able to effect what Caplow calls "compromise" between his aspirations and his abilities.[3]

There is strong evidence in the literature to suggest that there has not been enough realistic appraisal of the student's ability either by himself or as interpreted to him by others skilled in such matters. In other words, the student has not enough information, at his disposal, about the requirements of various vocational possibilities to be able to make a realistic choice. Williamson, in reviewing the history of counseling, points out that there has been a definite change in direction in vocational counseling as it was originally perceived by Thomas and Parsons in the twenties.[4] The original intention was the dissemination of vocational information and realistic evaluation of a student's potential by an educator skilled in such matters.[5, 6] The shift, according

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[1] J. Kenneth Morland, "Kent Revisited: Blue-Collar Aspirations and Achievement," in A. B. Shostak and W. Gomberg (Eds.) Blue-Collar World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964).

[2] T. Caplow, The Sociology of Work. (Minneapolis: The University of Minnesota Press, 1954).

[3] Ibid.

[4] E. G. Williamson, "An Outsider's View of Junior College Guidance Programs," Junior College Journal, XXX (May, 1960), pp. 489-501.

[5] Frank W. Thomas, The Junior College: Its Organization and Administration (Stanford: Stanford University Press, 1927).

[6] Frank Parsons, Choosing a Vocation (Cambridge: Houghton Mifflin Co., Riverside Press, 1909).

to Williamson, has been to a system of self-analysis which has resulted in the assignment of vocational placement to teachers, untrained in the psychological testing of aptitudes, the dispensing of information about needed training and employment opportunities.

Ginzberg et al. have offered a theory of occupational decision making. While agreeing with many of the aforementioned researchers that vocational choice is both accidental and influenced by "unconscious" motivations, they conclude that such decision making is irreversible, and extends over a period of time. Their theory is characterized by the existence of three periods of time ranging from a fantasy to a realistic level. The first period is at a fantasy level in which the young person dreams or aspires to a certain vocation or career. He does not possess either the economic opportunities of the career, the ability to achieve it or even any realistic knowledge about it. The second period is characterized by the student beginning to make some realistic recognition of his interests, capabilities and values. But this process, reached around the high school level, is still largely subjective. He has possessed increased knowledge about the world of work but as yet has little real understanding of his potential as it relates to his aspirations. The final stage, the realistic stage, is a compromise between his unrealistic aspirations and an increased knowledge of himself and the world of employment.[1]

In terms of Ginzberg's theory, it becomes possible for the junior college to provide the academically handicapped student a means of working through his fantasies until he reaches a realistic vocational choice.

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[1] E. S. Ginzberg et al., Occupational Choice: An Approach to a General Theory (New York: Columbia University Press, 1951).

The review of literature reveals many suggestions for curricula to meet the needs of low-ability students. The following are representative of the major lines of educational thinking in this area. Hoppock advocates, wherever possible, the adoption of a vocational career course designed to disseminate information about vocations through a variety of methods. Since there is constant change of vocational requirements and demands, the course outlined must be in constant revision and innovation.[1]

Hoppock has provided us with the essential ingredients for realistic vocational choices in stating that a student must have: (1) adequate information about himself; (2) adequate information about occupations and (3) the ability to think clearly.[2]

There is strong agreement as to the need for realistic self-evaluation. What constitutes realistic self-evaluation? First, there must be a strong battery of tests to determine intellectual level, special abilities and areas of weakness. Second, information must be made available concerning vocational opportunities and demand. Ohlsen suggests that such dissemination of vocational information be made in close cooperation with the State Employment Offices. The Guidance Department, then, can help the students make tentative vocational choices, help them explore vocational roles through extra-class curricula and evaluate themselves in the light of what they have learned about themselves and job opportunities. He also notes the need for follow-up studies to

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[1] Robert Hoppock, Occupational Information (New York: McGraw-Hill Book Co., 1957).

[2] Ibid., p. 76.

assess the program in terms of vocational choice appropriateness and satisfaction.[1]

To accomplish this Blocker et al. suggests a one-year program of exploratory and remedial courses for students of limited background, and that this year's work be administered or coordinated by the student personnel division. During this time, some of the students would receive sufficient compensatory education to help them achieve a two-or four-year academic program; other students who, despite the remedial work given, would need to discover another orientation related to some vocational or industrial program.[2]

Blocker also notes that there would be several logical results from this program:

1. The college-transfer curriculum is relieved of unprepared students.

2. The student personnel staff teaches the integrated guidance psychology course; the academic faculty thus gets a faculty image of student personnel workers.

3. The invitation to failure of the "open door" policy is eliminated: there is a termination goal in the college certificate.

4. An analytical study of the student's choice of problems and his progress in measuring them would add a potent interest and motivation for real goals. As guidance can give information on individuals for curriculum goals, so can curriculum give information to guidance for individual goals.[3]

Blocker further suggests the need for a course that would cover

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[1]Merle Ohlsen, Guidance Services in the Modern School (New York: Harcourt, Brace, and World, Inc., 1955).

[2]Clyde E. Blocker et al., The Two-Year College: A Social Syntheses (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), pp. 221-225.

[3]Ibid., p. 222.

educational and vocational diagnosis. He outlines the course requirements as follows:

1. Forecasts of job and educational opportunities.
2. Evaluation of students' interests, needs, expectations, aptitudes, and limitations.
3. Case studies in vocational and educational planning.
4. Observations of at least two different occupations in the community.
5. Individual analysis of the demands, skills, rewards, and limitations of three choices of vocations.
6. Individual conferences for educational planning of vocational choices.[1]

As a final requirement, Blocker et al. emphasize the need for a professional staff capable of diagnosing the vocational and academic abilities of low and modest aptitude students.

> Counseling psychologists with depth training in the therapeutic psychology and sociology are needed. Because of their extensive training, these teachers may have to be paid more than academic subject-matter teachers.
>
> They will try to help the student discover their talents and interests for vocational, social, and personal growth. This involves diagnosis of the individual's ambitions and limitations. Information must be found on vocations for which the individual is fitted, in which he will be successful, and for which there is a demand.
>
> Here lies one of the unique functions of the junior college: to offer an opportunity rather than frustration to below-median students.[2]

Richardson and Elsner have reported the recommendations of a faculty committee at Forest Park Community College in St. Louis, that devoted extensive study to the problem of meeting the needs of the educationally disadvantaged students. The faculty committee recommended

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[1] Ibid., p. 225.

[2] Ibid.

that a special program be established on an experimental basis to attempt to meet the needs of these students. The committee established as the goal of the program the following:

1. Meeting the needs of students in the lower range of the ability spectrum.

2. Improving standards in transfer courses by removing students incapable of making a contribution or of achieving significant benefit.

3. Providing educationally disadvantaged students with intensive counseling on an individual and group basis to: (a) minimize emotional factors inhibiting success; (b) aid students to assess realistically their potential and to relate this to vocational goals; and (c) identify students incapable of benefiting from any college program and refer them to community resources through accurate and complete knowledge of apprenticeship requirements, job openings, training courses such as those sponsored by the Manpower Development and Training Act, as well as other community resources.

4. Salvaging the academically able students from this group who might be upgraded to the point where they could be successful in regular technical or transfer programs.[1]

It is evident in examining the literature and research that community junior colleges are giving much attention to the problem of meeting the needs of low-ability students. Of prime concern is to assist these students, possessing unrealistic vocational goals, to aspire to more suitable vocations. Admittedly this is a task of exceeding difficulty. It is nonetheless, one of the most important tasks for the community junior college to research and resolve.

Harris has mentioned the increased desire of young people "to go to college," and yet, there is no evidence, he continues, to suggest that this generation is any more academically superior than in previous

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[1] Richard C. Richardson and Paul A. Elsner, "General Education for the Disadvantaged," Junior College Journal, XXXVI (December, 1965-January, 1966), p. 20.

decades.[1] What is needed, says Harris, are programs designed to help the less able student to enter the increasing semi-professional careers. He puts this responsibility at the doorstep of the community junior college.[2]

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[1] Norman C. Harris, "Administrative Leadership in Vocational-Technical Education," Junior College Journal, XXXII (May, 1962), p. 383.

[2] Ibid., p. 384.

CHAPTER III

PROCEDURES AND TECHNIQUES

Introduction

As indicated in the two previous chapters this study represented an attempt to discover, through the use of a noncognitive instrument, relationships that might exist between the measured variables and the behavior of low-ability students who hold unrealistic vocational goals as a result of being enrolled in a special curriculum. The observed behavior was the students' reorientation or lack of reorientation of vocational goals as a result of their experience in the Guided Studies Program. In this chapter the techniques and procedures used in this study and the methods of treating the data are described in detail.

The Student Sample

The students used in this study were those who completed the Guided Studies Program at Daytona Beach Junior College during the fall semester of 1965-66. Eligibility for admission into this special curriculum for incoming freshmen was determined by a consideration of a profile composed of students' scores or ratings on the following elements:

1. The Florida State Wide Twelfth Grade Tests
2. The School and College Ability Tests
3. The Sequential Tests of Educational Progress
4. Teacher or counselor recommendations

5. High school record

Specifically, assignment to the Guided Studies Program was based on (1) a student falling in the lower one-third on all or all but one of the profile elements and (2) the insistence of the student that he enroll in a curriculum area which seemed to be incommensurate with his measured abilities.

There were 90 students enrolled in the Guided Studies Program in August, 1965, with 11 withdrawals during the semester. For the purposes of this study only the 79 students who completed the one semester program were observed. These students are classified on the basis of sex and race in Table 1.

TABLE 1

CLASSIFICATION OF 79 GUIDED STUDIES STUDENTS ON THE BASIS OF SEX AND RACE

	Male		Female
White	54		14
Negro	2		9
Total	56	Total	23

The students were asked to indicate their vocational choice at the time of their initial contact with a college counselor. There were a wide variety of curricula represented in their responses. A goal of a baccalaureate was indicated by 64 of the students while 15 students wished to enter a two-year terminal program for which they lacked the required credentials. Table 2 contains a frequency distribution of the vocational goals indicated by the 79 students.

TABLE 2

STATED VOCATIONAL GOALS OF 79 GUIDED STUDIES STUDENTS

Vocational Goal	f
1. Architecture	2
2. Business Administration	12
3. Criminology	1
4. Dentistry	2
5. Education	13
6. Engineering	8
7. Medicine	2
8. Pharmacy	1
9. Sociology	3
10. Undecided	20
11. Business Education (two-year terminal)	9
12. Para-Medical (two-year terminal)	5
13. Engineering related (two-year terminal)	1
Total	79

Treatment

As indicated in Chapter I, the purpose of the Guided Studies Program was to (1) help upgrade students' academic deficiencies and (2) foster growth in self-understanding in the selection of an educational goal.

The students enrolled in this program were required to enroll in a special curriculum involving subject matter instruction in English, reading, and mathematics. In addition they were required to enroll in a Career Planning class. The three subject matter classes constituted the remedial aspect employed to upgrade the academic skills. The Career Planning class was designed to provide an opportunity for students to develop a realistic evaluation of their aptitudes, abilities, interests, and achievements.

The Career Planning class was taught by a team of four full-time

professional counselors. In this way it was possible to divide the regular classes of approximately twenty students into smaller groups and to create group counseling situations. A syllabus for the Career Planning class is contained in Appendix B.

Upon the completion of the program the students were judged either successful or unsuccessful. The successful students were those who actually indicated a choice in their educational goal by enrolling in a program considered more commensurate with their abilities and were experiencing success in this course of study. These students were referred to as the pass group.

Students who were judged unsuccessful were those who refused to accept any educational goal other than the one they indicated at the outset. These students were referred to as the fail group. It may be seen in Table 3 that there were 39 students in the pass group and 40 in the fail group.

TABLE 3

CLASSIFICATION OF 79 GUIDED STUDIES STUDENTS ON THE BASIS OF PASS-FAIL BY SEX AND RACE

Sex	Race	Pass	Fail
MALE			
	White	27	27
	Negro	2	0
FEMALE			
	White	8	6
	Negro	2	7
	TOTAL	39	40

The students were tested on the first day of classes and were retested on the last day of classes.[1] T_2 followed a semester's exposure to the Guided Studies Program. This exposure was viewed as the major experimental variable for the purposes of the study. Mean difference scores between T_1 and T_2 for seven student subgroups were tested for the significance of the differences.

The Instrument

As this study required a special technique to measure a specific category of attitudes, there was no appropriate instrument available. Therefore, it was necessary to construct an attitude scale (Appendix C).[2]

In selecting the format for the attitude questionnaire, the method of summated ratings was adopted because of its adaptability to statistical manipulation. Scoring of the questionnaire may be achieved by simply calculating a total of a subject's scores on the separate items. Likewise, individual scales can be produced by summing the scores on those items that relate to a single factor. The design of the item scale is illustrated in Fig. 1.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	UNCERTAIN	AGREE	STRONGLY AGREE

Figure 1. Sample item response from the College Attitude Scale.

[1] Henceforth the results of the test administered on the first day of classes will be referred to as T_1 and of the test administered on the last day of classes as T_2.

[2] The instrument is entitled The College Attitude Scale and, henceforth, will be referred to as such or as CAS.

The construction of the College Attitude Scale was based on the assumption that the students to whom it was to be administered held unrealistic attitudes because of today's social emphasis on "going to college." Admittedly, there were many approaches which might have been chosen in the selection of the dimensions to be examined. A priori scales were selected which seemed to relate to the phenomenon of students holding unrealistic attitudes about the necessity of a college education. The scales are described as follows:

1. SOCIAL — A high score on this scale indicates that the student feels that it is necessary for him to obtain a college education if he is to be a successful and accepted member of society.

2. EMPLOYMENT — A high score on this scale indicates that the student feels he will be unable to obtain adequate employment if he does not have a college education.

3. FINANCIAL — A high score on this scale indicates that the student feels that only people with a college education can expect to earn an adequate salary.

4. CONFIDENCE — A high score on this scale indicates that a student feels he can earn a college education no matter what his limitations might be.

5. CLARITY — A high score on this scale indicates that a student feels he has made a definite decision concerning his vocational goal.

6. KNOWLEDGE — A high score on this scale indicates that a student is aware of the requirements needed to achieve his vocational goal.

In addition to the above six scales, the following six scales were included in the instrument in an attempt to gain a more complete understanding of other attitudes and data relating to the students.

1. INTERESTS — A high score on this scale indicates that the student feels his vocational choice is closely related to his interests.

2.	BACKGROUND	A high score on this scale indicates that the student feels that he has the background needed to achieve his vocational goal.
3.	INFLUENCE	An attempt is made to identify the person who influenced most the student's career selection.
4.	APPLICATION	An attempt is made to measure the student's feelings about his abilities to apply himself to the rigor of college.
5.	PARENTS	An attempt is made to find out how the student perceives his parents' feelings about his going to college.
6.	MOTIVATION	An attempt is made to find out if there are reasons, other than the achievement of a vocational goal, which have motivated him to go to college.

The data collected from these six scales were used for institutional study at the time of the gathering of the data. For the purpose of this study only those items contained in the first six a priori scales have been included in the analysis.

Validity of the Instrument

A description of those items that relate to the twelve scales is contained in Appendix D. The distribution of items on the twelve scales is shown in Table 4.

The development of the research instrument required that each item be validated in terms of the stated measurement goal. The method of validation was that of submitting the instrument to three experts in the area of junior college education for the purpose of rating the appropriateness of each item. Junior college experts who participated as members of the jury and their present positions are:

Willard E. Field, M. Ed.	Director of Student Personnel Daytona Beach Junior College
John G. Losak, M. S.	Coordinator, Testing Department Miami-Dade Junior College

Eugene W. Schoch, Ed. D. Consultant, Student Personnel
Florida State Department of Education

In rating each item, the experts were required to base their judgment on the stated purpose of the instrument reported in Chapter I and stated as follows:

> . . . an attempt was made to examine the attitudes held by these students which related to the cultural tone of today as it relates to a "college education".

TABLE 4

DISTRIBUTION OF ITEMS ON THE TWELVE A PRIORI SCALES MAKING UP THE INITIAL FORM OF THE CAS

Scales	Items	N
Social	15, 22, 27, 42, 49, 58, 62	7
Employment	4, 17, 29, 31, 37, 51, 64	7
Financial	1, 19, 41, 55, 66, 76, 82	7
Confidence	6, 16, 21, 43, 50, 56, 71	7
Knowledge	7, 8, 24, 33, 44, 52, 59, 69	8
Clarity	2, 20, 39, 53, 67, 74, 80	7
Interests	3, 30, 38, 65, 73, 77	6
Background	5, 28, 36, 57, 63, 72	6
Influence	18, 32, 40, 54, 75, 81	6
Application	9, 10, 13, 23, 34, 45, 46, 47, 60, 70, 79, 83, 84	13
Parents	11, 25, 35, 61	4
Motivation	12, 14, 26, 48, 68, 78	6
	Total	84

Ratings made by the experts were reported on a one-to-five rating scale. Each expert rated individual items on the basis of the following scale categories:

5 - considered to be most appropriate

4 - considered to be moderately appropriate

3 - considered to be neither appropriate nor inappropriate

2 - considered to be moderately inappropriate

1 - considered to be most inappropriate

Results of the ratings of each item in the CAS were analyzed. Mean ratings of the items are indicated in Table 5.

TABLE 5

MEAN RATING OF ALL CAS ITEMS BY EACH JUNIOR COLLEGE SPECIALIST

Junior College Specialist	$\bar{X}$ Ratings of items
Field	4.50
Losak	4.43
Schoch	4.00

An analysis of the mean ratings made by the three specialists concerning the appropriateness of individual test items is contained in Table 6. It was noted that the mean rating for all 84 items was 4.31. The standard deviation of the 84 mean ratings was found to be .75. These results seemed to indicate that the instrument as a whole was considered to be appropriate for the purpose for which it was intended.

Since, for the purpose of this study, the analysis was limited to the first six a priori scales the mean ratings by the three specialists for the six scales is contained in Table 7.

A tabulation of the mean ratings made by the three specialists for the individual test items contained in the first six a priori scales is contained in Table 8. It was noted that the mean rating for the 43 items was 4.19.

TABLE 6

MEAN RATINGS OF CAS ITEMS BY THREE JUNIOR COLLEGE SPECIALISTS

Test Item	Mean Rating	Test Item	Mean Rating
1	5.00	43	4.33
2	3.67	44	4.00
3	5.00	45	4.67
4	4.33	46	3.67
5	4.00	47	4.33
6	4.67	48	4.67
7	4.67	49	4.33
8	5.00	50	3.67
9	3.67	51	3.67
10	3.67	52	4.00
11	5.00	53	4.67
12	4.33	54	5.00
13	4.33	55	4.67
14	3.67	56	4.67
15	4.67	57	3.33
16	4.67	58	2.67
17	3.67	59	4.67
18	5.00	60	3.67
19	4.67	61	2.00
20	4.00	62	3.33
21	5.00	63	4.00
22	4.67	64	4.00
23	4.67	65	5.00
24	5.00	66	4.67
25	4.67	67	4.33
26	5.00	68	4.67
27	4.67	69	4.33
28	4.33	70	4.33
29	5.00	71	5.00
30	5.00	72	3.67
31	4.67	73	4.33
32	5.00	74	4.33
33	3.67	75	3.00
34	4.33	76	5.00
35	5.00	77	4.00
36	3.67	78	4.33
37	3.67	79	4.00
38	4.00	80	4.00
39	4.00	81	5.00
40	5.00	82	3.67
41	4.00	83	3.67
42	5.00	84	3.33

Mean Rating = 4.31
Standard Deviation of Mean Ratings = .75

TABLE 7

MEAN RATINGS OF 43 ITEMS CONTAINED IN THE FIRST SIX A PRIORI SCALES OF THE CAS BY THREE JUNIOR COLLEGE SPECIALISTS

Junior College Specialist	Mean Ratings of Items
Field	4.53
Losak	4.77
Schoch	3.86

TABLE 8

MEAN RATINGS OF ALL 43 ITEMS CONTAINED IN THE FIRST SIX A PRIORI SCALES OF THE CAS BY THREE JUNIOR COLLEGE SPECIALISTS

Scale	Test Item	Mean Rating	Scale	Test Item	Mean Rating
SOCIAL	15	4.67	CONFIDENCE	6	4.67
	22	4.67		16	4.67
	27	4.67		21	5.00
	42	5.00		43	4.33
	49	4.33		50	3.67
	58	2.67		56	4.67
	62	3.33		71	5.00
EMPLOYMENT	4	4.33	KNOWLEDGE	7	4.67
	17	3.67		8	5.00
	29	5.00		24	5.00
	31	4.67		33	3.67
	37	3.67		44	4.00
	51	3.67		52	4.00
	64	4.00		59	4.67
				69	4.33
FINANCIAL	1	5.00	CLARITY	2	3.67
	19	4.67		20	4.00
	41	4.00		39	4.00
	55	4.67		53	4.67
	66	4.67		67	4.33
	76	5.00		74	4.33
	82	3.67		80	4.00

Mean Test Rating = 4.33
Standard Deviation of Mean Ratings = .54

Reliability of the Instrument

The reliability of the instrument was determined by the retest method. The CAS was administered to 48 students enrolled in a Guided Studies Program at Daytona Beach Junior College during the fall semester of 1966-67, on two occasions with the time interval being 48 hours. A Pearson product-moment coefficient of correlation was computed using total scores and was found to be .92.

Standardization Procedures

As considered here, "Standardization implies 'uniformity of procedure' in administering and scoring the test."[1] In the standardization of the CAS it was necessary to insure that specific procedures were followed during the test and retest administrations. The same requirements were necessary when testing for the purpose of reliability.

Detailed instructions for the administration of the instrument were written and the specific procedures were followed at each of the four administrations (Appendix E). All responses were recorded in an appropriate space on a separate answer sheet.[2]

For each of the administrations, the individual responses on each answer sheet were keypunched and verified. The test data were transferred to magnetic tape and stored for subsequent analysis by an IBM 7044.

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[1] Ann Anastasi, Psychological Testing. (New York: The Macmillian Company, 1959), p. 23.

[2] See instructions for the administration of the CAS. Appendix D.

Analyzing the Instrument

Factor analysis was selected to investigate the factor structure of the 42 items included in the first six a priori scales. The purpose of this analysis was to determine homogeneous scales for a final form of the CAS to be used in testing the hypotheses. The Pearson intercorrelation matrix for the 42 items was computed (the matrix is given in Appendix F). The communalities were estimated by a procedure suggested by Ledyard R Tucker and reported by Carlson.[1]

Principal axis factoring was used for the analysis. The number of factors was determined by examining the characteristic roots of the principal axis matrix. The characteristic roots are given in Table 9 and the principal axis loadings for the first seven factors are presented in Table 10. Noticeable breaks in the roots were found to be between roots three and four, between four and five and between roots seven and eight. This suggested the orthogonal varimax[2] rotation of three, four and seven factors. This was done and, as a result of examining the resulting principal loadings, the three factor rotation was accepted. The rotated factor loadings for the three factor rotation are shown in Table 11. The loadings resulting from the varimax rotation of the four and seven factors are given in Appendix G.

Accepting the three factor solution suggested that 79 percent of common variance of the 42 item scores could be explained by three dimensions. The identification of the factors would indicate the three scales to be included in the final form of the instrument. In selecting

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[1]Alfred B. Carlson, "Criteria for Farm Managers" (Unpublished doctoral dissertation, University of Illinois, Urbana, 1967), Appendix H.

[2]Harry H. Harman, Modern Factor Analysis (Chicago: University of Chicago Press, 1960), Chapter 14.

TABLE 9

CHARACTERISTIC ROOTS OF THE FACTOR MATRIX

Root Number	Characteristic Root	Percent of Common Variance	Cumulative Percent of Common Variance
1	8.56	41.23	41.23
2	4.31	20.76	61.99
3	3.52	16.97	78.96
4	1.65	7.98	86.94
5	1.33	6.41	93.35
6	1.27	6.13	99.48
7	1.08	5.22	104.70
8	0.78	3.76	108.46
9	0.77	3.69	112.15
10	0.64	3.10	115.25
11	0.51	2.48	117.73
12	0.45	2.17	119.90
13	0.37	1.81	121.71
14	0.34	1.66	123.37
15	0.27	1.31	124.68
16	0.20	0.98	125.66
17	0.20	0.96	126.62
18	0.15	0.71	127.33
19	0.11	0.55	127.88
20	0.10	0.47	128.35
21	0.03	0.15	128.50
22	-0.02	-0.08	128.42
23	-0.05	-0.24	128.18
24	-0.09	-0.44	127.74
25	-0.14	-0.66	127.08
26	-0.15	-0.74	126.34
27	-0.18	-0.87	125.47
28	-0.20	-0.95	124.52
29	-0.23	-1.09	123.43
30	-0.24	-1.18	122.25
31	-0.27	-1.32	120.93
32	-0.28	-1.36	119.57
33	-0.29	-1.41	118.16
34	-0.33	-1.60	116.65
35	-0.35	-1.70	114.86
36	-0.36	-1.75	113.11
37	-0.39	-1.89	111.22
38	-0.43	-2.07	109.15
39	-0.44	-2.11	107.04
40	-0.46	-2.22	104.82
41	-0.49	-2.38	102.44
42	-0.51	-2.44	100.00

TABLE 10

PRINCIPAL AXIS LOADINGS FOR THE 43 ITEMS CONTAINED IN THE FIRST SIX A PRIORI SCALES OF THE CAS

Item No.	FACTORS 1	2	3	4	5	6	7
1	.64	-.03	-.20	-.25	-.04	.07	-.20
2	.45	.43	.32	-.14	.22	-.03	-.24
4	.52	.05	-.21	-.14	-.18	.36	-.15
6	.67	-.21	.22	.06	.11	.04	.09
7	.27	.39	.50	-.03	.04	-.16	.18
8	.09	.17	.37	.41	-.18	-.27	.00
15	.35	-.19	.03	-.25	.08	-.23	.00
16	.61	-.09	.01	-.31	.22	.11	.33
17	.58	.09	-.13	.03	-.18	-.15	-.17
19	-.15	-.28	.41	.46	.12	.19	-.00
20	.46	-.37	-.00	.03	-.15	.18	.24
21	.55	-.28	.27	.24	.19	.04	.07
22	.08	-.31	.37	.44	.16	.20	-.16
24	.31	.45	.53	.06	-.01	-.13	-.04
27	.47	-.04	-.31	.34	.03	-.19	.05
29	.75	-.39	.27	.03	.02	-.02	-.06
31	.72	-.21	-.00	.00	.14	-.13	-.21
33	.49	-.54	.17	.02	-.25	.03	-.07
37	-.02	-.09	.17	.32	-.09	.10	.13
39	.34	.57	.36	-.19	.01	-.02	-.17
41	.58	.00	-.32	.09	.10	-.04	-.36
42	.59	.05	-.22	.16	.00	.05	-.01
43	.33	-.30	.05	.02	.24	-.31	.02
44	.29	.58	.12	.10	.05	.19	-.11
49	.30	.13	.00	.04	-.06	-.32	.19
50	.53	-.24	.26	-.21	.09	.17	.10
51	.49	.33	-.24	.01	-.14	.27	.07
52	.36	.42	.62	-.15	-.04	-.08	.07
53	-.08	.62	.01	-.02	-.21	.24	.04
55	.21	.40	-.36	.30	-.11	.06	.28
56	.56	.08	.10	-.14	.15	.23	.46
58	.68	.01	-.34	.13	.39	.02	-.02
59	.46	-.30	-.05	-.13	-.51	-.05	.04
62	.16	.42	-.39	.13	-.03	-.30	.03
64	.66	.18	-.14	.20	.01	.09	.01
66	.50	.26	-.46	-.04	.05	-.02	-.06
67	.34	.62	.26	.03	-.13	.06	-.07
69	.50	-.45	.18	-.10	-.45	-.02	-.06
74	.14	.11	.34	.12	-.25	-.21	.11
76	.23	.05	-.39	-.05	.07	-.32	.23
80	.18	-.35	.08	-.06	-.13	-.20	-.05
82	.42	.14	-.42	.30	-.17	.02	.02

TABLE 11

LOADINGS RESULTING FROM VARIMAX ROTATION OF THREE FACTORS

Item Number	FACTORS 1	2	3
1	.45	.49*	.09
2	.12	.19	.66*
4	.30	.46*	.09
6	.67*	.14	.26
7	.06	-.05	.68*
8	.04	-.15	.38
15	.39	.10	.02
16	.51*	.30	.18
17	.34	.46*	.19
19	.16	-.49	.03
20	.57*	.12	-.07
21	.65*	.00	.20
22	.34	-.35	.07
24	.05	-.02	.76*
27	.31	.48*	-.06
29	.86*	.07	.21
31	.67*	.33	.13
33	.75*	-.07	-.06
37	.08	-.17	.05
39	-.03	.16	.73*
41	.35	.56*	.01
42	.35	.52*	.11
43	.45*	.03	-.04
44	-.14	.31	.56*
49	.13	.22	.20
50	.60*	.02	.22
51	.09	.59*	.24
52	.13	-.08	.81*
53	-.45	.19	.38
55	-.18	.54*	.10
56	.38*	.27	.33
58	.41	.64*	.04
59	.52*	.18	-.05
62	-.24	.54*	.07
64	.34	.54*	.27
66	.10	.72*	.06
67	-.09	.25	.70*
69	.69*	-.02	.01
74	.11	-.12	.34
76	.05	.43*	-.13
80	.37	-.10	-.10
82	.13	.59*	-.03

items to be included in each of the three scales for the final form of the instrument, in general only those items having rotated factor loadings of .40 or higher were chosen. Such loadings are indicated by an asterik in Table 11.

The remaining sets for the final instrument consisted of 12, 14, and 7 items respectively. These three primary dimensions were then examined to define the basic attitude dimensions statistically existing within the 42 items contained in the first six a priori scales. The three factors are described below with the factor loadings preceding each item included in the factor.

Factor I

The first major dimension, at first examination, appeared to represent a combination of the Employment, Confidence, Knowledge, and Clarity a priori scales. Upon a closer examination, however, it became apparent that the 12 items included in this dimension appear to describe, in general, a student's attitudes concerning confidence in his ability to earn a college education and his awareness of the requirements needed to achieve his goal.

The following items describe the general character of this dimension:

.67 If given the opportunity I can get a college education.

.51 If I just apply myself I will make good grades in college.

.65 I know I am capable of earning much better grades than I did in high school.

.45 I am capable of succeeding in several vocations.

.60 My success in college is dependent on my ability to study hard.

.38 No matter how difficult the work is if I just try I can succeed in college.

This factor seems to describe clearly a student's confidence in his ability to succeed in college. It becomes evident, however, as a result of examining the remaining items included in this dimension that a cluster of highly related attitudes emerge. This is the student's attitude concerning the responsibility of the college in helping him decide what program of study to pursue. The following items describe this cluster.

.57 College helps you decide what vocational goal you should pursue.

.69 I need to know more about my chosen vocation.

.52 I need to know if I have the ability to succeed in my chosen vocation.

.75 I would like to talk to someone about my chosen vocation.

Two additional items were included in this major dimension. In examining these items it becomes evident that the first 10 items in this dimension are not unrelated to more general cultural attitudes concerning the importance of a college education. These two items were:

.86 A college education will give me an opportunity for advancement.

.67 Employers are always more interested in a college graduate.

Factor II

This factor represents a combination of the Social, Employment, and Financial a priori scales. It appears to be the purest of the 3 factors. Clearly, the 14 items included are related to a student's attitudes concerning the importance of a college education to his future. It seems reasonable that these three a priori scales should combine into one. The relationship between acquiring adequate employment, earning a sufficient salary and achieving social acceptance seemed obvious. The

following items describe the general character of this dimension:

.54 It is difficult to be accepted in the community without a college education.

.43 People think better of you if you have a college education.

.52 To be a success I must get a college education.

.64 My future is dependent on my getting a college education.

.49 To earn an adequate salary I must get a college education.

.56 My future earning power is dependent on my getting a college education.

.54 If I want to be able to buy anything I want I have to get a college education.

.72 I will not be able to earn a good living if I do not get a college education.

.43 People who have a college education make the most money.

.59 To live comfortably I need a college education.

.46 It is difficult to get a good job without a college education.

.46 A future employer will look unfavorably on me if I do not have a college education.

.59 To earn a college education is the only way I can prepare myself for employment.

.54 The only way in which I can be successful in my future job is to get a college education.

Factor III

This dimension contained seven items from the a priori scales of Clarity and Knowledge. Generally, this factor measures the degree to which a student has made a definite decision concerning his vocational goal. It became apparent as a result of further examination that his reported knowledge about the chosen vocation was related to his choice. The items included in this factor are as follows:

.66 I know exactly what I want to study in college.

.73 My vocational goals are well defined at the present time.

.70 I am certain of the type of work in which I will be engaged ten years from now.

.68 I have had an opportunity to talk to people who know a lot about my chosen vocation.

.76 I know a great deal about my chosen vocation.

.56 I know the academic requirements necessary for my chosen vocation.

.81 I have a good understanding of my vocational interests.

As a result of the factor analysis and of a logical examination of the resulting dimensions, the three scales were accepted and were included in the final form of the instrument. A description of the final three scales is as follows:

Scale I--Confidence

A high score on this scale indicates that a student feels that he can earn a college education no matter what his limitations might be. In addition, he feels that the college has a responsibility to assist him in defining his vocational goals.

Scale II--Importance

A high score on this scale indicates that a student feels that it is necessary for him to obtain a college education if he is to be a successful and accepted member of society. To attain this goal, he feels that he must obtain adequate employment and earn an adequate salary. To achieve this, he feels that a college education is necessary.

Scale III--Clarity

A high score on this scale indicates that a student feels

that he has made a definite decision concerning his vocational goal and knows a great deal about it.

The validity of the items contained in the three scales was determined in terms of the original individual item ratings assigned by the jury. An analysis of the mean ratings assigned by the three specialists as to the appropriateness of the 12 items retained in Scale I--Confidence is reported in Table 12. The mean score on a one to five appropriateness rating scale is reported for each item. It may be noted that the mean rating for all 12 items was 4.44.

TABLE 12

MEAN RATINGS OF CAS ITEMS ON SCALE I BY THREE JUNIOR COLLEGE SPECIALISTS

Test Item	Mean Rating
6	4.67
16	4.67
20	4.00
21	5.00
29	5.00
31	4.67
33	3.67
43	4.33
50	3.67
56	4.67
59	4.67
69	4.33

Mean Rating = 4.44
Standard Deviation of Mean Ratings = .44

An analysis of the mean ratings assigned by the jury for the 14 items retained in Scale II---Importance is indicated in Table 13. The mean rating for all 14 items was 4.17.

TABLE 13

MEAN RATINGS OF CAS ITEMS ON SCALE II
BY THREE JUNIOR COLLEGE SPECIALISTS

Test Item	Mean Rating
1	5.00
4	4.33
17	3.67
27	4.67
41	4.00
42	5.00
51	3.67
55	4.67
58	2.67
62	3.33
64	4.00
66	4.67
76	5.00
82	3.67

Mean Rating = 4.17
Standard Deviation of Mean Ratings = .69

An analysis of the mean ratings for Scale III--Clarity is indicated in Table 14. The mean rating for all seven items was 4.24.

TABLE 14

MEAN RATINGS OF CAS ITEMS ON SCALE III
BY THREE JUNIOR COLLEGE SPECIALISTS

Test Item	Mean Rating
2	3.67
7	4.67
24	5.00
39	4.00
44	4.00
52	4.00
67	4.33

Mean Rating = 4.24
Standard Deviation of Mean Ratings = .43

It should be noted that the mean ratings assigned by the jury of 4.44 for Scale I, 4.17 for Scale II, and 4.24 for Scale III compared favorably with the total mean rating of the original 84 items of 4.31 as reported earlier in the present chapter.

The reliability of the three scales was determined by calculating a Pearson-product moment coefficient of correlation from the available retest data limited to the items included in the three scales. The reliability coefficients for the summated scores for each of the three scales are reported in Table 15.

TABLE 15

RELIABILITY COEFFICIENTS FOR THE THREE SCALES

Scale	Number of Items	Reliability
Confidence	12	.94
Importance	14	.94
Clarity	7	.84

Statistical Analysis Employed

The first question to be examined was stated earlier in Chapter I as:

> Do attitudes differ at the outset between those low-ability students who are considered successful and those who are labeled unsuccessful?

In an attempt to examine this question the means for each group, as defined by the criterion (pass or fail), were calculated for each scale. Since the observations in the two groups were unmatched, the significance of the difference between means was calculated by using the following formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1 - 1} + \frac{s_2^2}{n_2 - 1}}}$$

The null hypothesis was assumed that no difference existed between the mean scores on each of the scales at T_1 of those students who subsequently passed and those who subsequently failed ($\bar{X}_1 - \bar{X}_2 = 0$).

If the null hypothesis were to be rejected ($\bar{X}_1 - \bar{X}_2 \neq 0$) related to any or all of the three scales there would be evidence to suggest that a certain dimension of attitudes as measured by any or all of the three scales was functionally related to students' reorientation toward vocational goals following exposure to the Guided Studies Program.

The Analysis of Variance Model

An analysis of variance design[1] was chosen that would allow an examination of the remaining three questions:

2. Does the total group experience a change in attitude as a result of their experience in the Guided Studies Program?

3. Do successful and unsuccessful students experience different changes in attitudes as a result of their experience in the Guided Studies Program?

4. Do the subgroups (sex, race) experience a different change in attitudes as a result of their experience in the Guided Studies Program?

Only main effects were examined as it was assumed that interaction effects were negligible with subsequent examination of the assumptions.

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[1] R. Darrell Bock, "Programming Univariate and Multivariate Analysis of Variance," Technometrics, V (February, 1963), pp. 95-116.

In the analysis design, four classification variables were identified with three having two values:

1. Total group
2. Success criterion
   a. Pass
   b. Fail
3. Race
   a. White
   b. Negro
4. Sex
   a. Male
   b. Female

The formula describing the analysis of variance model used is as follows:

$$y_{ijkl} = m + a_i + b_j + c_k + e_{ijkl},$$

where: y_{ijkl} = the observed value of the $ijkl^{th}$ subject

m = the population mean

a_i = the effect due to pass or fail,
where $i = 1$ indicates pass
and $i = 2$ indicates fail

b_j = the effect due to race,
where $j = 1$ indicates white
and $j = 2$ indicates Negro

c_k = the effect due to sex,
where $k = 1$ indicates male
and $k = 2$ indicates female

e_{ijkl} = the residual effect of the l^{th} observation in the ijk^{th} cell, e.g. y_{1125} would be the observed value of the fifth person in the group of passing white males.

The above model may be expressed in matrix terms by the equation:

$$\underline{y} = A\,\underline{h} + \underline{e},$$

where: $\underline{y}_{\cdot}$ = the vector of group means

A = the design matrix

$\underline{h}$ = the vector of parameters

$\underline{e}_{\cdot}$ = the vector of group mean residuals

In expanded form, this equation may be expressed:

$$\begin{bmatrix} y_{111\cdot} \\ y_{112\cdot} \\ y_{121\cdot} \\ y_{122\cdot} \\ y_{211\cdot} \\ y_{212\cdot} \\ y_{222\cdot} \end{bmatrix} = \begin{bmatrix} 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 & 1 & 1 & 0 \\ 1 & 1 & 0 & 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 & 0 & 1 \\ 1 & 0 & 1 & 0 & 1 & 0 & 1 \end{bmatrix} \cdot \begin{bmatrix} m \\ a_1 \\ a_2 \\ b_1 \\ b_2 \\ c_1 \\ c_2 \end{bmatrix} + \begin{bmatrix} e_{111\cdot} \\ e_{112\cdot} \\ e_{121\cdot} \\ e_{122\cdot} \\ e_{211\cdot} \\ e_{212\cdot} \\ e_{222\cdot} \end{bmatrix} \quad *$$

Since a major assumption underlying an analysis of variance was that the within group variances be homogeneous, the calculation of the variance in each individual group classification on each test scale was necessary.

The variance for each group was calculated by applying the following formula:

$$s^2_{ijk} = \frac{n_{ijk} \sum_{l=1}^{n_{ijk}} y^2_{ijkl} - \left(\sum_{l=1}^{n_{ijk}} y_{ijkl} \right)^2}{n_{ijk} \left(n_{ijk} - 1 \right)}$$

*Note that group 221 is vacant.

The variances for each group on each of the three statistical scales are reported in Table 16.

TABLE 16

VARIANCES FOR EACH GROUP ON SCALE I, SCALE II, AND SCALE III

Group Classification	Scale I s^2	Scale II s^2	Scale III s^2
y_{111}	125.50	121.18	32.95
y_{112}	47.41	67.98	38.93
y_{121}	12.50	242.00	24.50
y_{122}	4.50	128.00	50.00
y_{211}	70.61	103.61	49.43
y_{212}	14.27	25.37	20.57
y_{222}	11.48	64.81	22.33

In examining Table 16, there seemed to be noticeable differences in the variances in Scale I. Hence, each scale was submitted to Bartlett's test for the homogeneity of variances by applying the following formula:[1]

$$V = \frac{2.3026}{c} \left[(N - k) \log s_w^2 - \sum_i (m_i - 1) \log s_i^2 \right],$$

where V is distributed on $X^2_{(k-1)}$.

[1] Quinn McNemar, Psychological Statistics, (New York: John Wiley and Sons, Inc., 1955), pp. 247-248.

The results of applying Bartlett's test for the homogeneity of variances for the three scales were reported in Table 17.

TABLE 17

RESULTS OF BARTLETT'S TEST FOR THE THREE SCALES

Scale	V
I	18.28*
II	4.46
III	2.51

*Significant at the .01 level of confidence

It was seen that for Scale I, V = 18.28. This is significant at the .01 level of confidence and, therefore, it was concluded that the differences in the variances may be regarded as nonchance.

For Scale II, V = 4.46, and Scale III, V = 2.51, which were not significant at the .05 level of confidence, thus supporting the assumption that the within group variances were homogeneous.

In an attempt to establish homogeneity of the within group variances in Scale I, the data were transformed by taking the signed square roots of the absolute values of the difference scores. By submitting the data to such a monotonic transformation, the relative rank of the difference scores was held constant. The mean difference scores for Scale I are indicated in Table 18 along with the transformed mean difference scores and the variances resulting from the transformation.

Bartlett's test for the homogeneity of variances was applied to the variances of the transformed difference scores in Scale I and the resulting V was found to be 4.38, which was not significant at the .05 level of confidence.

TABLE 18

MEAN DIFFERENCES OF SCORES FROM T_1 TO T_2 FOR SCALE I TRANSFORMED TO THEIR SIGNED SQUARE ROOTS AND THE VARIANCES

Group Classification	$\bar{y}$	$\overline{\sqrt{y}}$	s^2
y_{111}	-5.04	-1.58	4.86
y_{112}	-6.63	-2.36	1.33
y_{121}	-3.50	-1.72	1.05
y_{122}	-3.50	-1.83	.34
y_{211}	.93	- .02	5.27
y_{212}	-1.33	- .61	2.76
y_{222}	-2.14	- .94	2.47

It was then possible to proceed with the analysis of variance.

Since A is of rank 4 and only 4 individual linear functions of the elements in $\underline{h}$ can be estimated, let these be $\underline{\theta}_{(4X1)}$, where $\underline{\theta} = L\,\underline{h}$ is as defined below:

$$\underline{\theta} = \begin{bmatrix} 1 & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \\ 0 & 0 & 0 & 0 & 0 & 1 & -1 \\ 0 & 0 & 0 & 1 & -1 & 0 & 0 \\ 0 & 1 & -1 & 0 & 0 & 0 & 0 \end{bmatrix} \cdot \begin{bmatrix} m \\ a_1 \\ a_2 \\ b_1 \\ b_2 \\ c_1 \\ c_2 \end{bmatrix}$$

or:

$$\theta_1 = m + \tfrac{1}{2}(a_1 + a_2 + b_1 + b_2 + c_1 + c_2)$$

$$\theta_2 = c_1 - c_2$$

$$\theta_3 = b_1 - b_2$$

$$\theta_4 = a_1 - a_2$$

The values of θ_1, θ_2, θ_3, and θ_4 were estimated and the null hypotheses that $\theta_1 = 0$, $\theta_2 = 0$, $\theta_3 = 0$ and $\theta_4 = 0$ were tested.

Due to the fact that there was an empty cell and an unequal number of observations in the remaining cells it was impossible to make independent tests of all of the parameters. Therefore, the procedure suggested by Bock[1] was to test the null hypothesis, $\theta_1 = 0$, ignoring θ_2, θ_3, and θ_4. The null hypothesis, $\theta_2 = 0$, was tested correcting for the effects of θ_1 and ignoring θ_3 and θ_4. The null hypothesis, $\theta_3 = 0$, was tested correcting for the effects of θ_1 and θ_2 and ignoring θ_4. The null hypothesis, $\theta_4 = 0$, was tested correcting for the effects of θ_1, θ_2, and θ_3. If $\theta_1 \neq 0$, there was an overall change in mean scores; if $\theta_2 \neq 0$, change scores for males were different from those for females; if $\theta_3 \neq 0$, change scores for white students were different from those for Negro students; if $\theta_4 \neq 0$, those who passed had change scores different from those who failed.

There were seven degrees of freedom between groups of which the hypothesized model accounted for four. Thus, there were three degrees of freedom remaining between groups not accounted for by the model used. If the model provided an adequate description of the data, the variance associated with the remaining three degrees of freedom should, within

[1] Ibid.

sampling error, be equal to the within groups variance. If it were significantly larger, it would suggest that interaction terms might need to be added to the model. In order to test whether or not they were significantly larger, an F test was performed.

CHAPTER IV

PRESENTATION AND DISCUSSION OF THE RESULTS

In the section on statistical analysis presented in the last chapter it was stated that an attempt was made to examine the four questions as stated in Chapter I by analyzing the data in two main steps.

The first question to be examined was:

> Do attitudes differ at the outset between those low-ability students who are considered successful and those who are labeled unsuccessful?

The first step in the analysis was an examination of this question and involved the computation of the means and standard deviations on each of the three scales included in the final form of the instrument at T_1 for successful (pass) students and unsuccessful (fail) students. The means on the three scales for successful (pass) students were compared with the means for unsuccessful (fail) students.

Frequency distributions of the scores for successful and unsuccessful students at T_1 on Scale I, Scale II, and Scale III are contained in Appendices H (Tables 42 and 44), I (Tables 60 and 62), and J (Tables 78 and 80) respectively.

Individual scores for successful and unsuccessful students at T_1 on Scale I, Scale II, and Scale III are contained in Appendix K (Tables 86 through 91).

Since the observations in the two groups were unmatched, the

significance of the difference between means was calculated by using the following formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1 - 1} + \frac{s_2^2}{n_2 - 1}}}$$

The null hypothesis assumed was that no difference existed between the mean scores on each of the scales at T_1 of those students who passed and those who failed ($\bar{X}_1 - \bar{X}_2 = 0$). The "t" ratio calculated for the observed differences between the means for Scale I was 1.12, for Scale II was .52, and for Scale III was 1.21 as shown in Table 19.

TABLE 19

THE NUMBER OF STUDENTS EXAMINED (PASS AND FAIL), THE MEANS AND STANDARD DEVIATIONS ON EACH SCALE OF THE CAS AT T_1, THE OBSERVED DIFFERENCE BETWEEN MEANS, AND THE "t" VALUE

Group Classification	Scale I	Scale II	Scale III
Pass Group (n = 39)			
$\bar{X}_1$	49.90	48.05	21.80
$S.D._1$	5.89	8.70	4.22
Fail Group (n = 40)			
$\bar{X}_2$	48.08	49.15	22.65
$S.D._2$	8.21	9.96	6.30
$\bar{X}_1 - \bar{X}_2$	1.82	-1.10	-1.47
t	1.12	.52	1.21

A "t" value of 2.00 on each scale would be significant at the 5 percent level of confidence with 77 degrees of freedom for the students included in the analysis. As it was seen in Table 19 the "t" values for each scale failed to meet the 5 percent level of confidence. This would suggest that there are more than 5 chances in 100 of a difference as large as this one occurring by chance. The null hypotheses, therefore, were not rejected.

In accepting the null hypothesis, it appeared that there were no significant differences between the scores on any scale at T_1 of students who passed and those who failed. Therefore, it was concluded that the three scales included in the CAS had little, if any, predictive validity in terms of the pass-fail criterion.

The Analysis of Variance Model

The second step in the statistical analysis was to examine the remaining three questions:

> Does the total group experience a change in attitude as a result of their experience in the Guided Studies Program?
>
> Do successful and unsuccessful students experience different changes in attitudes as a result of their experience in the Guided Studies Program?
>
> Do the subgroups (sex, race) experience a different change in attitudes as a result of their experience in the Guided Studies Program?

As indicated in Chapter III an analysis of variance model was selected which would test each of the three hypotheses individually with only main effects being examined as it was assumed that interaction effects were negligible with subsequent examination of the assumptions.

In the analysis of variance model the questions to be examined were stated in terms of the following null hypotheses.

1. $\theta_1 = 0$

   where, θ_1 is defined as the difference in mean change scores for the total student sample.

2. $\theta_2 = 0$

   where, θ_2 is defined as the difference between the mean change scores according to sex.

3. $\theta_3 = 0$

   where, θ_3 is defined as the difference between the mean change scores according to race.

4. $\theta_4 = 0$

   where, θ_4 is defined as the difference between the mean change scores according to the pass-fail criterion.

The analysis of variance was performed three times. Each of the four hypotheses was tested for each of the three scales. In analyzing the data it was necessary to calculate change scores for each of the 79 students contained in the total sample. It was then possible to divide the data into the appropriate groups. For each analysis it was necessary to consider the data in terms of the total group (θ_1), sex (θ_2), race (θ_3), and the pass-fail criterion (θ_4). Summary statistics for all three scales, including frequency distributions of raw scores and frequency distributions of difference scores, are contained in Appendices H (Tables 32 through 49), I (Tables 50 through 67), and J (Tables 68 through 85). Individual scores are contained in Appendix K (Tables 86 through 92).

Included in each analysis of variance was an F test for the residual variance. On each scale the variance of the three degrees of freedom not accounted for by the model was tested against the within groups variance.

The results of the three analyses of variance are reported below. The findings are presented in three sections by scale.

Scale I--Confidence

The results of the analysis of variance for Scale I--Confidence are presented in Table 20. As it may be seen, statistically significant differences were found to exist for θ_1 and θ_4.

For θ_1, which is defined as the difference in scores from T_1 to T_2 for the total group, Table 20 indicates an F value of 16.65, which is significant at the .001 level of confidence. This may be interpreted to mean that the mean score of the total group on Scale I--Confidence decreased a significant amount following their exposure to the Guided Studies Program. As may be seen in Table 21 the total group had a mean difference score of -2.54, which as stated above is significant at the .001 level of confidence. Thus the null hypothesis $\theta_1 = 0$ was rejected.

This supports the hypothesis in the second question that on Scale I--Confidence the total group experienced a change in their attitudes.

For θ_2, which is defined as the difference in mean scores from T_1 to T_2 between males and females, the mean difference scores of -2.11 for males and -3.70 for females, as reported in Table 21, were found not to differ significantly and the null hypothesis $\theta_2 = 0$ was not rejected.

For θ_3, which is defined as the difference in mean scores from T_1 to T_2 between white and Negro students, the mean difference scores of -2.53 for white students and -2.64 for Negro students, as reported in Table 22, were found not to differ significantly and the null hypothesis $\theta_2 = 0$ was not rejected.

For θ_4, which is defined as the difference in scores from T_1 to

TABLE 20

ANALYSIS OF VARIANCE FOR SCALE I

CONFIDENCE

SOURCE	SS	df	s^2	F
θ_1 (ignoring θ_2, θ_3, and θ_4)	69.63	1	69.63	16.65*
θ_2 (corrected for θ_1 and ignoring θ_3 and θ_4)	5.76	1	5.76	1.38
θ_3 (corrected for θ_1 and θ_2 and ignoring θ_4)	9.05	1	9.05	2.16
θ_4 (corrected for θ_1, θ_2, and θ_3)	48.16	1	48.16	8.52**
(Model)	(132.60)	(4)		
Within Groups	301.15	72	4.18	
Residual	.91	3	.30	.73
Total	434.66	79		

*Significant at the .001 level
**Significant at the .01 level

TABLE 21

THE MEAN DIFFERENCE SCORES OF STUDENTS WHO PASSED OR FAILED BY SEX AND RACE FOR SCALE I--CONFIDENCE

GROUP CLASSIFICATION		PASS	FAIL	TOTAL
MALE		-4.93	+ .93	-2.11
	White	-5.04	+ .93	
	Negro	-3.50	0	
FEMALE		-6.00	-1.77	-3.70
	White	-6.62	-1.33	
	Negro	-3.50	-2.14	
TOTAL		-5.20**	+ .05	-2.54*

*Significant at the .001 level of confidence
**Significant at the .01 level of confidence

T_2 between students who were successful and students who were unsuccessful, Table 20 indicates an F value of 8.52, which is significant at the .01 level of confidence. Thus the null hypothesis $\theta_4 = 0$ was rejected. This supports the hypothesis in the third question that on Scale I--Confidence successful and unsuccessful students experience a different change in attitudes. They may be interpreted to mean that those students who, at the end of the Guided Studies experience accepted an educational goal considered more commensurate with their abilities and were successfully pursuing the program, experienced a significantly greater decrease in mean scores on Scale I--Confidence than did the students who refused to accept any educational goal other than the one they indicated at the outset. As may be seen in Table 21 the pass group had a mean difference score of -5.20 while the fail group had a mean difference score of +.05,

whose difference, as stated above, is significant at the .01 level of confidence.

TABLE 22

THE MEAN DIFFERENCE SCORES BY RACE

SCALE I--CONFIDENCE

GROUP CLASSIFICATION	TOTAL
White	-2.53
Negro	-2.64

The test of the residual variance against the within groups variance yielded an F ratio of .73, as indicated in Table 20. This is not significant. Therefore, it can be assumed that the model does not need any additional parameters, such as interaction terms, in order to adequately describe the data.

Scale II--Importance

The results of the analysis of variance for Scale II--Importance are presented in Table 23. As it may be seen, statistically significant differences were found to exist for θ_1 and θ_4.

For θ_1, which is defined as the difference scores from T_1 to T_2 for the total group, Table 23 indicates an F value of 16.72, which is significant at the .001 level of confidence. This may be interpreted to mean that the mean score of the total group on Scale II--Importance decreased a significant amount following their exposure to the Guided Studies Program. As may be seen in Table 24 the total group had a decrease of 4.68, which as stated above is significant at the .001 level of

TABLE 23

ANALYSIS OF VARIANCE FOR SCALE II

IMPORTANCE

SOURCE	SS	df	s^2	F
θ_1 (ignoring θ_2, θ_3, and θ_4)	1673.59	1	1673.59	16.72*
θ_2 (corrected for θ_1 and ignoring θ_3 and θ_4)	1.16	1	1.16	.02
θ_3 (corrected for θ_1 and θ_2 and ignoring θ_4)	6.68	1	6.68	.07
θ_4 (corrected for θ_1, θ_2, and θ_3)	436.98	1	436.98	4.36***
(Model)	(2118.41)	(4)		
Within Groups	7206.16	72	100.09	
Residual	219.44	3	73.15	.73
Total	9544.01	79		

*Significant at the .001 level
***Significant at the .05 level

confidence. Thus the null hypothesis $\theta_1 = 0$ was rejected. This supports the hypothesis in the second question that on Scale II--Importance the total group experienced a change in their attitudes.

TABLE 24

THE MEAN DIFFERENCE SCORES OF STUDENTS WHO PASSED OR FAILED BY SEX AND RACE FOR SCALE II--IMPORTANCE

GROUP CLASSIFICATION		PASS	FAIL	TOTAL
MALE		-6.24	-3.07	-4.71
	White	-6.48	-3.07	
	Negro	-3.00	0	
FEMALE		-9.30	-1.00	-4.61
	White	-9.37	1.17	
	Negro	-9.00	-2.86	
TOTAL		-9.03***	-2.40***	-4.68*

*Significant at the .001 level of confidence
***Significant at the .05 level of confidence

For θ_2, which is defined as the difference in mean scores from T_1 to T_2 between males and females the mean difference scores of -4.71 for males and -4.61 for females, as reported in Table 24, were found not to differ significantly and the null hypothesis $\theta_2 = 0$ was not rejected.

For θ_3, which is defined as the difference in mean scores from T_1 to T_2 between white and Negro students, the mean difference scores of -4.79 for white students and -4.00 for Negro students, as reported in Table 25, were found not to differ significantly and the null hypothesis $\theta_3 = 0$ was not rejected.

For θ_4, which is defined as the difference in mean scores from T_1 to T_2 between students who were successful and students who were unsuccessful, Table 23 indicates an F value of 4.36, which is significant at the .05 level of confidence. Thus the null hypothesis $\theta_4 = 0$ was rejected. This supports the hypothesis in the third question that on Scale II--Importance successful and unsuccessful students experienced a different change in attitudes. This may be interpreted to mean that those students who, at the end of the Guided Studies experience accepted an educational goal considered commensurate with their abilities and were successfully pursuing the program, experienced a significantly greater decrease in mean score on Scale II--Importance than did the students who refused to accept any educational goal other than the one they indicated at the outset. As may be seen in Table 24 the pass group had a mean difference score of -9.03 while the fail group had a mean difference score of -2.40, whose difference as stated above is significant at the .05 level of confidence.

TABLE 25

THE MEAN DIFFERENCE SCORES BY RACE

SCALE II--IMPORTANCE

GROUP CLASSIFICATION	TOTAL
White	-4.79
Negro	-4.00

TABLE 26

ANALYSIS OF VARIANCE FOR SCALE III

CLARITY

SOURCE	SS	df	s^2	F
θ_1 (ignoring θ_2, θ_3, and θ_4)	148.02	1	148.02	3.91
θ_2 (corrected for θ_1 and ignoring θ_3 and θ_4)	18.68	1	18.68	.49
θ_3 (corrected for θ_1 and θ_2 and ignoring θ_4)	102.02	1	102.02	2.70
θ_4 (corrected for θ_1, θ_2, and θ_3)	.07	1	.07	.00
(Model)	(268.79)	(4)		
Within Groups	2726.06	72	37.86	
Residual	282.13	3	94.04	2.48
Total	3276.99	79		

The test of the residual variance against the within groups variance yielded an F ratio of .73, as indicated in Table 23. This is not significant. Therefore, it can be assumed that the model does not need any additional parameters, such as interaction terms, in order to adequately describe the data.

Scale III--Clarity

The results of the analysis of variance for Scale III--Clarity are presented in Table 26. As it may be seen no statistically significant differences were found to exist.

For Θ_1, which is defined as the difference in scores from T_1 to T_2 for the total group, the mean difference score of +2.09, as reported in Table 27, was found not to be a significant change and the null hypothesis $\Theta_1 = 0$ was not rejected.

TABLE 27

THE MEAN DIFFERENCE SCORES OF STUDENTS WHO PASSED OR FAILED BY SEX AND RACE FOR SCALE III--CLARITY

GROUP CLASSIFICATION		PASS	FAIL	TOTAL
MALE		+2.01	+2.74	+2.41
	White	+2.44	+2.74	
	Negro	-3.50	0	
FEMALE		+2.70	+ .23	+1.30
	White	+2.12	+2.83	
	Negro	+5.00	-2.00	
TOTAL		+2.20	+1.92	+2.09

For θ_2, which is defined as the difference in mean scores from T_1 to T_2 between males and females, the mean difference scores of +2.41 for males and +1.30 for females, as reported in Table 27, were found not to differ significantly and the null hypothesis $\theta_2 = 0$ was not rejected.

For θ_3, which is defined as the difference in mean scores from T_1 to T_2 between white and Negro students, the mean difference scores of +2.56 for white students and -1.00 for Negro students, as reported in Table 28, were found not to differ significantly and the null hypothesis $\theta_3 = 0$ was not rejected.

For θ_4, which is defined as the difference scores from T_1 to T_2 between students who were successful and students who were unsuccessful, the mean difference scores of +2.20 for successful students and +1.92 for unsuccessful students, as reported in Table 27, were found not to differ significantly and the null hypothesis $\theta_4 = 0$ was not rejected.

TABLE 28
THE MEAN DIFFERENCE SCORES BY RACE
SCALE III--CLARITY

GROUP CLASSIFICATION	TOTAL
White	2.56
Negro	-1.00

The test of the residual variance against the within groups variance yielded an F ratio of 2.48, as indicated in Table 26. This is not significant. Therefore, it can be assumed that the model does not need any additional parameters, such as interaction terms, in order to adequately describe the data.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The general purpose of this study was to examine selected attitudes held by a group of low-ability students enrolled in a special program and to discover if these attitudes or changes in the attitudes were related to the students' selection of an appropriate educational program. The following two specific purposes served to support the undertaking of this study.

1. To examine the attitudes and changes in attitudes of low-ability students who hold unrealistic feelings concerning the need for a college education.

2. To relate these attitudes or changes in attitudes to subsequent behavior following exposure to the Guided Studies Program.

With these two specific purposes in mind, an attempt was made to answer the following questions:

1. Do attitudes differ at the outset between those low-ability students who are considered successful and those who are labeled unsuccessful?

2. Does the total group experience a change in attitudes as a result of their experience in the Guided Studies Program?

3. Do the subgroups (sex, race) experience a different change in attitudes as a result of their experience in the Guided Studies Program?

4. Do successful and unsuccessful students experience different changes in attitudes?

Studies related to meeting the needs of low-ability students were reviewed. A description of the special program to which the student sample was exposed was described.

The major effort of the study involved the development of a research instrument that would measure selected attitudes held by low-ability students concerning the necessity of a college education. The instrument was a questionnaire with a 5-point scale of agreement containing three scales.

The analysis of the instrument involved the factor analysis of the 43 items used in this study. These items were factor analyzed to determine the factor structure of the attitudes held by the students. Three dimensions were found and the statistical analysis involved the items contained in these three scales. The validity and reliability of the instrument was established. The final form of the instrument is contained in Appendix L.

The instrument was administered on the first day of classes and again on the last day of classes. The changes in attitudes were the difference scores between the pre- and post-test.

It was necessary to calculate difference scores for each student on each scale and mean difference scores for seven group classifications based on sex, race and the pass-fail criterion.

The second phase of the analysis involved subjecting the data describing successful and unsuccessful students at T_1 to a t-test in an attempt to examine the first question. In examining the remaining three questions mean difference scores for seven group classifications were submitted to an analysis of variance. This analysis was performed three times, once for each of the three scales. Interaction effects were

examined in each analysis of variance and the assumption that main effects adequately described the model was substantiated.

Conclusions

The results of this study provide evidence to support the following conclusions:

1. Pre-test mean scores on the three scales were very similar for students who were subsequently considered successful and those who were considered unsuccessful. The small differences suggests that it would be impossible to predict from CAS scores earned by students at the outset the pass-fail criterion as defined in this study.
2. The scores for the total student group decreased significantly from T_1 to T_2 on Scale I--Confidence, which is defined as the student's confidence in himself to do college work and his feeling that the college has a responsibility to assist him in defining his vocational goals. This would suggest that the Guided Studies Program succeeded in bringing about somewhat of a change in the unrealistic attitudes held by the low-ability students concerning their ability to do college work.
3. The scores for the total student group decreased significantly from T_1 to T_2 on Scale II--Importance, which is defined as the feeling that it is necessary to obtain a college education in order to be a successful and accepted member of society. This would suggest that the Guided Studies Program succeeded in bringing about somewhat of a change in the

attitudes held by students concerning the necessity of a college education in order to obtain adequate employment and earn an adequate salary.

4. The scores for the total student group increased somewhat on Scale III--Clarity, which is defined as the feeling by a student that he has made a definite decision concerning his vocational goal and knows a great deal about it. The difference, however, failed to be significant; thus these attitudes are regarded as unchanged.

5. The comparison of difference scores from T_1 to T_2 by subgroups (sex, race) failed to yield any significant differences on any of the three scales. Thus, it may be concluded that neither sex nor race nor any combination of the two describes a student group that would react more positively to the Guided Studies Program than another.

6. The scores for the successful students decreased significantly greater than T_1 to T_2 than did the scores for the unsuccessful students on Scale I--Confidence. This may be interpreted to mean that those students who changed their vocational goals to a program more commensurate with their abilities also changed their feelings about their ability to succeed in a program that appeared to be unrealistic for them, while those attitudes held by students who failed to alter their vocational goals remained relatively unchanged.

7. The scores for the successful students decreased significantly greater from T_1 to T_2 than did the scores for the unsuccessful students on Scale II--Importance. This may be interpreted

to mean that those students who changed their vocational goals to a program more commensurate with their abilities also changed their feelings concerning the need for a college education in order to obtain adequate employment and earn an adequate salary, while those attitudes held by students who failed to change their vocational goal remained relatively unchanged.

8. The comparison of difference scores from T_1 to T_2 between successful and unsuccessful students failed to yield any significant differences on Scale III—Clarity. Thus students in both groups experienced a similar small increase in their mean scores related to having made a definite decision concerning their vocational goals, but this attitude must be regarded as unchanged in the absence of statistical significance.

It should be noted that it would be unreasonable to expect race differences to be statistically significant because of the small number of subjects included in these subgroups. It is the writer's opinion, however, that even with a larger number of subjects the analysis would have failed to indicate any significant differences on the basis of race. The only significant differences were found to exist in the difference scores of the total group and difference scores when the subjects were grouped according to the pass-fail criterion, while the analysis by race and sex failed to result in any significant differences.

Since this study represented an attempt to develop an instrument to measure selected attitudes held by a special student population, and was used to measure changes in the observed attitudes as a result of

students' experience in a specially designed curriculum and was to a degree successful, the writer feels that the instrument has value to junior college educators as they plan new curricula.

It is recommended, however, that investigation should be continued toward the establishment of additional attitude dimensions--those which may prove to be significant when examining the difference scores by subgroups. This may suggest the need of further consideration of including interaction terms in the research model. In addition, new attitude dimensions may exist which would have predictive value for student placement. That is to say, if differences could be found to exist between the successful and the unsuccessful students at the outset there would be evidence to suggest which group of students would be likely to respond to an experience such as the Guided Studies Program.

Since this study was limited to the analysis of the first six a priori scales, it is recommended that further investigation be undertaken into the value of the item type included in the second six a priori scales as predictor variables for the pass-fail criterion. Little has been done to date in an attempt to gather data relating to junior college students' backgrounds and characteristics. These data may be highly related to the performance of students enrolled in junior colleges.

Implications

The expected increase in enrollments of low-ability students in community junior colleges throughout the country demands that these institutions respond by presenting a wide variety of curricular offerings, especially those that have a purpose similar to that of the Guided Studies Program offered at Daytona Beach Junior College.

As indicated in the results of this examination, these low-ability students often hold unrealistic attitudes about the importance of a college education. Students can, however, change these feelings and an appropriately planned curriculum may bring the students to a point of self-realization at which they are able to change their attitudes.

The need for additional curricula development is apparent as there were those students who changed neither their attitudes nor their vocational goals. The students, however, who changed their vocational goals also demonstrated a measured change in certain attitudes. Curricula might be developed with this relationship in mind.

Too often education, in identifying low-ability student groups, assumes that such a categorization results in a homogeneous student group. It is apparent, however, that these students are not alike at the outset nor do they respond similarly to a standard stimulus.

For community junior colleges responding to the needs of the low-ability students consideration should be given to the diversity of responses by these students to instructional programs that can be expected. The Guided Studies Program, while succeeding for some students, failed in meeting the needs of others. A diversified program is demanded and decisions concerning the course content and instructional objectives should be based on research into the characteristics of the students. This task is in the hands of the more than 800 community junior colleges presently existing in the United States.

APPENDIX A

The Guided Studies Project: A Specially Designed Curriculum to Help the Academically-Handicapped Student Aspire to an Educational-Vocational Goal Commensurate with his Ability and Interests:

In order to help the academically-handicapped students find a suitable educational-vocational career goal, he will be placed in a specially designed pre-college semester which will have two purposes: first, to help upgrade his academic deficiencies; and two, to foster growth in self-understanding in choosing a realistic educational-vocational goal. The courses and their descriptions are listed below. They are numbered less then 100 and will not be either transferable nor will they be applicable toward an Associate Degree.

G.S. 1 Basic English 3 semester hours

This course is designed for students who have not attained a minimum proficiency in English usage. While fundamentals of grammar, sentence structure, will be stressed with emphasis, the course will actually be a writing laboratory. It is hoped that in this way the student's aversion to writing may be somewhat mitigated by the actual allotments of a specified time to the task. Subject matter will include both personal self-examination and factual report writing.

G.S. 2 Basic Reading 3 semester hours

Emphasis is on diagnosis of reading difficulties and improvement of the skills involved in vocabulary, note-taking, listening, reading rates, and overall comprehension. This course is also a reading lab built around such reading tools as Research Associated Reading Lab; Tachistoscopic equipment, etc., and reading selections suitable for their interests and reading levels.

G.S. 3 Basic Mathematics 3 semester hours

A study of number systems, measurement, and fundamentals of algebra is included in this course. The use of consumer mathematics in essential areas of daily living will be emphasized.

G.S. 4 Career Planning 3 semester hours

The purpose of this course is to provide an opportunity for students to develop a realistic understanding of their aptitudes, interests, and achievements. This understanding is basic to the development of meaningful personal direction and realistic educational planning.

The three subject matter courses, GS 1, GS 2, and GS 3, constitute the remedial measures employed to upgrade the academic skills of the academically-handicapped student. GS 4, Career Planning, is the course which provides an opportunity for students to develop a realistic evaluation of their aptitudes, abilities, interests, and achievements. The Career Planning course shall incorporate the following materials and methods:

1. Questionnaires to determine demographic and socioeconomic variables.
2. Questionnaires to investigate their vocational interests, hobbies, likes and dislikes.
3. Administration and interpretation of the Kuder Preference Inventories-both Personal and Vocational.
4. Administration of group ability tests and individual tests when indicated.
5. Guest speakers from various industries and the Armed Services.
6. Field trips to various vocational and technical areas on campus.
7. Interviews in the professional vocational interest and in two other alternative vocational possibilities.
8. Investigation of academic and training requirements for various job employments.
9. Administration and interpretation of the G.A.T.B. by the Florida State Employment Service.
10. Observations of academic classes in order to provide understanding of academic requirements.
11. Self-evaluation of the student's weaknesses, abilities, and interests.
12. Use of group dynamics for discussion of realistic vocational choices.
13. Assigned readings and reports on vocational information.
14. Mid-term and end-of-term evaluations by the G.S. 4 counselor.

While the G.S. 4 course (the Career Planning course) carries the brunt of the guidance service for the student, it should be noted that the academic subjects are also guidance-oriented, to the extent that the subject matter, whenever possible, is guidance-related, designed to foster self-understanding and realistic self-appreciation.

Required in the G.S. 1 course are topics designed to stimulate insight and self-evaluation. Some of the required assignments include the following:

1. An Autobiography
2. Common Conflicts Between Parents and Children
3. Reasons for Choosing My Vocation
4. What Can I Do if I Can't Become a (Teacher, Lawyer) etc.
5. The Reasons I am Academically-Handicapped
6. My Greatest Fear, etc.
7. Can I be Successful Without a College Degree?

One requirement of the G.S. 1 course is somewhat novel. All themes are written in class. The grammar assignments are done outside. Why the reverse procedure? Experience has shown that the academically handicapped student avoids writing as he would avoid plague, sometimes plagiarizing from other students or getting other students to write them. By making the G.S. 1 a writing lab, the student is forced to attend to the job he dislikes most.

G.S. 2 emphasizes the numerous uses of mathematical concepts in everyday life:

1. How numbers will have use in the student's vocational area of interest.
2. Importance of numbers in the student's everyday living, reading, consuming.
3. Student evaluation of arithmetic strengths and weaknesses, and subsequent corrections.
4. Counseling with students to help remove emotional blocks to learning mathematical processes.

G.S. 3 concentrates on many types of reading materials designed to foster self-examination such as:

1. Write-up of the student's daily log--how much time does he actually devote to academic studies?
2. Concentration on improved study habits.
3. Readings on vocational employment: Qualifications and demand.
4. Realistic evaluation of the student's reading abilities and the need for a high reading efficiency in academic classes.

The emphasis in all the courses is thus self-growth and self-appreciation. This emphasis which permeates the entire program rests on the premise that significant changes in orientation come about more effectively from a student's insight into his own abilities and interests than from primarily external evaluation and stimulus. Consequently, the whole program will be geared to the student's exploration of himself, his limitations and strengths and appropriate fields of endeavor that will help meet his interests and needs. This approach does not exclude counseling techniques but rather does emphasize the need to stimulate the student's own active participation in planning for his future needs. It is hoped that, in this way, the student can partially escape from the social expectations and pressures which have forced him toward a goal which is highly unrealistic (if such be the case).

Evaluation Procedures for Prognosis and Planning. One of the preliminary problems facing the Guided Studies Staff is the determination of cause of the student's academic retardation. All that is known about a student when he enters the Guided Studies Program is that certain scores on college achievement tests place him in the academically-handicapped category. The quantitative scores on the battery of tests do not tell us anything more.

For each student in the Guided Studies Program there is set up by the Coordinator a special cumulative file to record any and all relevant data collected on the student at admission, during any of the subject courses, or arising from the counseling and testing of the student. These files are confidentail and are not accessible to the rest of the college except by special request and permission of the Coordinator.

These files then are a cumulative record consisting of the following information:

1. High school transcripts
2. Battery test scores

3. Indicated professional choice at admissions
4. Autobiographical material from G.S. 1 course
5. Health records
6. Anecdotal records as deemed important by any of the G.S. teachers
7. Results of the special abilities and interest tests, including the Kuder Preference Test and the GATB and other tests as indicated
8. Attendance records
9. Relevant personal information as revealed in other G.S. theme writing
10. Results of personal and group counseling
11. Academic achievement as reflected by tests and retests in G.S. 1, 2, and 3
12. Retest of alternate forms of the tests taken at the beginning of the semester, including the SCAT, STEP, and the Nelson Denney Reading Tests

Informal and Formal Evaluations of the Student: A close relationship between the Guided Studies Staff and the Guided Studies students is fostered so that the students may feel able to seek advice and help. At other times, the teacher has the opportunity to have small informal evaluations with the student in his course.

Formal evaluations occur twice during the semester; at mid-term and end-of-semester. The academic and counseling staff meet at these two times and make a joint evaluation and recommendation of the student's progress and future planning. This information is communicated to the student in his Career Planning class.

At mid-term and end-of-term, the academic staff and counselors will meet for formal evaluation of the student. The Guided Studies committee will evaluate the student's progress, his limitations and his strengths, and will make a joint recommendation for the student's future educational and vocational planning. The joint recommendation will be communicated to the student by his Career Planning counselor. The staff recommendation will generally be one of the following:

1. A recommendation to pursue a course that will ultimately lead to a four-year program (Associate in Arts degree).
2. A recommendation to pursue one of the vocational areas of study in the Vocational Division of the Daytona Beach Junior College.
3. A recommendation to pursue a terminal technical program (the Associate in Science degree).
4. A recommendation to enroll in remedial courses given by the college.
5. A recommendation to pursue other areas of education or employment until he has achieved either enough motivation or sufficient educational background to do the required class work. Such areas would include:

(a) remedial work under the auspices of the Adult or College Division of Daytona Beach Junior College
(b) enlistment in the Armed Forces
(c) employment in the community or other areas
(d) registration in night courses as a part-time student until he has achieved 15 hours and reapply as a full-time student.

It is hoped that these recommendations would be given sparingly and only as a last resort since the aim of the Guided Studies program is to have the student arrive at his own realistic decision on the basis of growth in self-understanding.

APPENDIX B

SYLLABUS FOR CAREER PLANNING CLASSES

Daytona Beach Junior College

Guided Studies Division

Objectives:

To help the student become more realistic in the selection of a career through a better understanding of self and a knowledge of what careers are available within his realm of possibilities.

Major Activities:

Testing-Achievement, Interests, Self-Concepts, Abilities, Aptitudes.
Discussion of test results.
Interviews of people with extensive work experience - not in student's career area.
Discussions of emotional needs satisfied by vocations.
General Aptitude Test Battery given and interpreted by Florida State Employment Service.
Mid-term evaluation of abilities vs. chosen career requirements.
Survey of current occupations.
Vocational tours.
Development of alternate career choices.
Discussion of armed forces requirements and career possibilities.
Discussion of how to apply for a job.
Discussion of how to hold and progress in a job.
Group and individual counseling.
Final evaluations and discussion of recommendations.

General Outline:

Unit I - Orientation

Purpose: To inform the students about the objectives of the Guided Studies Program and how they can get the most out of it.
CM-1: Orientation talks by counselors plus a question and answer period.
CM-2: Orientation talk by President of Daytona Beach Junior College.

Unit II - Testing

Purpose: To help the student understand himself (abilities and limitations).
Pre-school: STEP & SCAT tests
CM-1: Bill's Concepts Test

CM-2: College Attitude Test
CM-3: Kuder Preference Record - Vocational Interests.
CM-4: Same
CM-5: Same
CM-6: Scoring above
CM-7: General explanation of Kuder results to the whole group by a counselor.
CM-8: Discussion of Kuder results in small groups with counselors.
CM-27: See Unit IV on GATB Testing
28:
CM-42: Retesting Bill's STEP, SCAT, and CAS for final
45: evaluation and counseling.

Unit III - Job Interviews

Purpose: To help the student find out what people do to earn a living; what they like and dislike about their work; how the student would like to be doing this kind of work.
CM-1: Interviewing working classmates about their jobs.
CM-2: Buzz group to develop questions about the teacher's entire working experience.
CM-3: Developing good questions to use in their interview of a working person.
CM-4: Reports and discussions of student interviews of experienced workers.
CM-5: Same
CM-6: Same
CM-7: Reports and discussions of student interviews in area of career interest.
CM-8: Same
CM-10: Same
CM-11: Same

Unit IV - Job-Oriented GATB Tests

Purpose: To have the student tested, evaluated, and counselled by someone outside the Guided Studies Program, hoping that students will come up with more realistic career choices.
CM-1: GATB Tests
CM-2: GATB Tests
CM-3: GATB Tests
CM-4: Discussion of alternate choices suggested by FSES counselor
CM-5: Same

Unit V - Mid-Term Evaluation

Purpose: To confront the individual student with his test results and Guided Studies course grades with the minimums for college success and survival in his chosen career.
CM-1: Group counseling; Discussion of low achievement and high college requirements. Individual counseling.

Unit VI - Alternate Career Choices

Purpose: To help students survey occupations and select more realistic second and third choices.

CM-1: Discussion of occupations suggested by GATB results.

CM-2: Investigation of occupational files in library.

CM-3: Tour of vocational division of the college.

CM-4: Recruiter describes Armed Forces as a career; question and answer period.

CM-5: Discussion of local, state, national job openings, furnished by FSES.

Unit VII - Emotional Needs and Job Satisfaction

Purpose: To acquaint students with common emotional needs and how they can be satisfied in vocations.

CM-1: Listing and describing emotional needs with much class discussion.

CM-2: Class lists jobs which they think would satisfy these needs.

CM-3: Discussion of proportion of all needs satisfied by teaching profession.

CM-4: Class considers needs satisfied by own career choices.

Unit VIII - Getting and Holding a Job

Purpose: To instruct the student on how to get a job and how to progress in a job or career.

CM-1: Discussion of applying for a job, ways and means, dress, manners, etc.

CM-2: Do's and don'ts on how to progress in a job.

APPENDIX C

INSTRUCTIONS

This questionnaire is designed to help us meet your educational needs and to help you in your educational planning. It is not an examination; it is an opinion poll of the attitudes and needs of college freshmen. In order to complete the questionnaire, you are to indicate on the answer sheet the degree to which you agree with each of the statements. As you consider each statement evaluate it in terms of the following ratings.

5. You STRONGLY AGREE with the statement
4. You AGREE with the statement
3. You are UNCERTAIN
2. You DISAGREE with the statement
1. You STRONGLY DISAGREE with the statement

The questionnaire consists of 84 statements. You will respond to each of the 84 statements on the separate answer sheet by placing a circle around the number (1, 2, 3, 4 or 5) which most accurately reflects your opinion of the statement.

Now try SAMPLE STATEMENT A.

SAMPLE STATEMENT A: Women are better drivers than men.

Find Sample Statement A on the separate answer sheet. Evaluate this statement in terms of the following ratings:

5. You STRONGLY AGREE with the statement
4. You AGREE with the statement
3. You are UNCERTAIN
2. You DISAGREE with the statement
1. You STRONGLY DISAGREE with the statement

You should have circled on the answer sheet a number 1, 2, 3, 4 or 5.

Now try SAMPLE STATEMENT B.

SAMPLE STATEMENT B: American Education is better today than it was 50 years ago.

You are now ready to complete the questionnaire. Remember that you must respond to each statement as best you can. Do not spend too much time on any one item. ANSWER EACH ITEM as you come to it. DO NOT omit any. There is no time limit. You will be allowed to complete the questionnaire. If you are interested in the results of this opinion poll, write the word "interested" in the upper left hand corner of your answer sheet and we will let you know the results.

There should be no talking.

COLLEGE ATTITUDE SCALE

1. To earn an adequate salary I must get a college education.
2. I know exactly what I want to study in college.
3. I have always been interested in the vocation I have chosen.
4. It is difficult to get a good job without a college education.
5. My high school record is not a good indication of my ability to succeed in college.
6. If given the opportunity I can get a college education.
7. I have had an opportunity to talk to people who know a lot about my chosen vocation.
8. I have had a lot of experience in my chosen vocation.
9. I do well on tests.
10. Learning is more important than grades.
11. My parents are confident that I can do college work.
12. I am going to college because it is the only way I can achieve my goal.
13. I am content with making a "C" average.
14. I am going to college because it's a good place to meet people.
15. Everyone should try to get a college education.
16. If I just apply myself I will make good grades in college.
17. A future employer will look unfavorably on me if I do not have a college education.
18. My family has influenced me in my selection of a vocational goal.
19. A person can make a good salary even if he does not have a college education.
20. College helps you decide what vocational goal you should pursue.
21. I know I am capable of earning much better grades than I did in high school.
22. People can be successful without a college education.

23. I will have to learn how to study better in order to be successful in college.

24. I know a great deal about my chosen vocation.

25. My parents think I should go to work and not bother with college.

26. I am going to college because my parents want me to go to college.

27. People think better of you if you have a college education.

28. I know I have the necessary background to achieve my chosen vocation.

29. A college education will give me an opportunity for advancement.

30. I do not know what my vocational interests are.

31. Employers are always more interested in a college graduate.

32. No one has influenced me in the selection of my vocational goal. The choice was my own.

33. I would like to talk to someone about my chosen vocation.

34. Studying is the most important thing for a college student.

35. My parents want me to go to college.

36. My high school has given me the background necessary to succeed in college.

37. Employers are interested in a qualified person regardless of his educational level.

38. It is important that I consider my interests in planning my career.

39. My vocational goals are well defined at the present time.

40. A teacher or counselor in my high school has influenced my selection of a vocational goal.

41. My future earning power is dependent on my getting a college education.

42. To be a success I must get a college education.

43. I am capable of succeeding in several vocations.

44. I know the academic requirements necessary for my chosen vocation.

45. I like to study.

46. There are other aspects of college just as important as studying, such as extracurricular activities.

47. I won't be happy unless I make much better than a "C" average.

48. I am going to college because my friends are in college.

49. I will be able to get along better with other people if I have a college education.

50. My success in college is dependent on my ability to study hard.

51. To earn a college education is the only way I can prepare myself for employment.

52. I have a good understanding of my vocational interests.

53. There is only one vocation for me.

54. My friends have influenced me in my selection of a vocational goal.

55. If I want to be able to buy anything I want I have to get a college education.

56. No matter how difficult the work is if I just try I can succeed in college.

57. I know that the educational goal I have chosen is realistic for me.

58. My future is dependent on my getting a college education.

59. I need to know if I have the ability to succeed in my chosen vocation.

60. I enjoy learning.

61. I would rather go to college than get a job.

62. It is difficult to be accepted in the community without a college education.

63. I believe that I am as well prepared to do college work as any other high school graduate.

64. The only way in which I can be successful in my future job is to get a college education.

65. My vocational choice is closely related to my interests.

66. I will not be able to earn a good living if I do not get a college education.

67. I am certain of the type of work in which I will be engaged ten years from now.

68. I am going to college because I can't think of anything better.

69. I need to know more about my chosen vocation.

70. I know how to study.

71. I know I am capable of earning much better grades than I did in high school.

72. I took the necessary courses in high school to succeed in my chosen vocation.

73. To be successful, my chosen vocation must be closely related to my interests.

74. Students should have their vocational goals well defined before they enter college.

75. I have given a great deal of thought in selecting my vocational goal.

76. People who have a college education make the most money.

77. It is important that I am aware of my interests if I am to be successful.

78. I am going to college because I am primarily interested in extra curricular activities.

79. I am really motivated to go to school.

80. There are several vocations in which I am interested.

81. People who are working in my chosen field have influenced me in my selection of a vocational goal.

82. To live comfortably I need a college education.

83. Getting good grades is more important than learning.

84. I would rather go to work than go to school.

COLLEGE ATTITUDE SCALE

ANSWER SHEET

SAMPLE PROBLEMS
A. 1 2 3 4 5
B. 1 2 3 4 5

Name: _____ (Last) (First) (MI)

Date: _____

1.	1	2	3	4	5	26.	1	2	3	4	5	51.	1	2	3	4	5	76.	1	2	3	4	5
2.	1	2	3	4	5	27.	1	2	3	4	5	52.	1	2	3	4	5	77.	1	2	3	4	5
3.	1	2	3	4	5	28.	1	2	3	4	5	53.	1	2	3	4	5	78.	1	2	3	4	5
4.	1	2	3	4	5	29.	1	2	3	4	5	54.	1	2	3	4	5	79.	1	2	3	4	5
5.	1	2	3	4	5	30.	1	2	3	4	5	55.	1	2	3	4	5	80.	1	2	3	4	5
6.	1	2	3	4	5	31.	1	2	3	4	5	56.	1	2	3	4	5	81.	1	2	3	4	5
7.	1	2	3	4	5	32.	1	2	3	4	5	57.	1	2	3	4	5	82.	1	2	3	4	5
8.	1	2	3	4	5	33.	1	2	3	4	5	58.	1	2	3	4	5	83.	1	2	3	4	5
9.	1	2	3	4	5	34.	1	2	3	4	5	59.	1	2	3	4	5	84.	1	2	3	4	5
10.	1	2	3	4	5	35.	1	2	3	4	5	60.	1	2	3	4	5						
11	1	2	3	4	5	36.	1	2	3	4	5	61.	1	2	3	4	5						
12.	1	2	3	4	5	37.	1	2	3	4	5	62.	1	2	3	4	5						
13.	1	2	3	4	5	38.	1	2	3	4	5	63.	1	2	3	4	5						
14.	1	2	3	4	5	39.	1	2	3	4	5	64.	1	2	3	4	5						
15.	1	2	3	4	5	40.	1	2	3	4	5	65.	1	2	3	4	5						
16.	1	2	3	4	5	41.	1	2	3	4	5	66.	1	2	3	4	5						
17.	1	2	3	4	5	42.	1	2	3	4	5	67.	1	2	3	4	5						
18.	1	2	3	4	5	43.	1	2	3	4	5	68.	1	2	3	4	5						
19.	1	2	3	4	5	44.	1	2	3	4	5	69.	1	2	3	4	5						
20.	1	2	3	4	5	45.	1	2	3	4	5	70.	1	2	3	4	5						
21.	1	2	3	4	5	46.	1	2	3	4	5	71.	1	2	3	4	5						
22.	1	2	3	4	5	47.	1	2	3	4	5	72.	1	2	3	4	5						
23.	1	2	3	4	5	48.	1	2	3	4	5	73.	1	2	3	4	5						
24.	1	2	3	4	5	49.	1	2	3	4	5	74.	1	2	3	4	5						
25.	1	2	3	4	5	50.	1	2	3	4	5	75.	1	2	3	4	5						

APPENDIX D

INDIVIDUAL ITEMS RELATING TO THE 12
A PRIORI SCALES

I. EMPLOYMENT

1. It is difficult to get a good job without a college education.
2. A college education will give me an opportunity for advancement.
3. To earn a college education is the only way I can prepare myself for employment.
4. A future employer will look unfavorably on me if I do not have a college education.
5. The only way in which I can be successful in my future job is to get a college education.
6. Employers are always more interested in a college graduate.
7. Employers are interested in a qualified person regardless of his educational level.

II. CONFIDENCE

1. No matter how difficult the work is, if I just try, I can succeed in college.
2. If given the opportunity, I can get a college education.
3. My success in college is dependent on my ability to study hard.
4. If I just apply myself, I will make good grades in college.
5. I know I have the ability to get a college education.
6. I know I am capable of earning much better grades than I did in high school.

III. SOCIAL

1. To be a success, I must get a college education.
2. Everyone should try to get a college education.
3. It is difficult to be accepted in the community without a college education.
4. People think better of you if you have a college education.
5. I will be able to get along better with other people if I have a college education.
6. My future is dependent on my getting a college education.
7. People can be successful without a college education.

IV. FINANCIAL

1. To earn an adequate salary, I must get a college education.
2. I will not be able to earn a good living if I do not get a college education.
3. My future earning power is dependent on my getting a college education.
4. People who have a college education make the most money.
5. If I want to be able to buy anything I want, I have to get a college education.

6. To live comfortably, I need a college education.
7. A person can make a good salary even if he does not have a college education.

V. KNOWLEDGE

1. I know a great deal about my chosen vocation.
2. I know the academic requirements necessary for my chosen vocation.
3. I have had an opportunity to talk to people who know a lot about my chosen vocation.
4. I need to know more about my chosen vocation.
5. I need to know if I have the ability to go into my chosen vocation.
6. I would like to talk to someone about my chosen vocation.
7. I have had a lot of experience in my chosen vocation.

VI. CLARITY

1. My vocational goals are well defined at the present time.
2. I am certain of the type of work in which I will be engaged ten years from now.
3. There is only one vocation for me.
4. I know exactly what I want to study in college.
5. Students should have their vocational goals well defined before they enter college.
6. College helps you decide what vocational goal you should pursue.
7. There are several vocations in which I am interested.

VII. INTERESTS

1. My vocational choice is closely related to my interests.
2. To be successful, my chosen vocation must be closely related to my interests.
3. I have always been interested in the vocation I have chosen.
4. I have a good understanding of my vocational interests.
5. It is important that I am aware of my interests if I am to be successful.
6. It is important that I consider my interests in planning my career.
7. I do not know what my vocational interests are.

VIII. BACKGROUND

1. I know that the educational goal I have chosen for myself is realistic for me.
2. I know I have the necessary background to achieve my chosen vocation.
3. I believe I am as well prepared to do college work as any other high school graduate.
4. My high school record is not a good indication of my ability to succeed in college.

5. My high school has given me the background necessary to succeed in college.
6. I took the necessary courses in high school to succeed in my chosen vocation.

IX. INFLUENCE

1. I have given a great deal of thought in selecting my vocational goal.
2. My family has influenced me in my selection of a vocational goal.
3. A teacher or counselor in my high school has influenced my selection of a vocational goal.
4. My friends have influenced me in my selection of a vocational goal.
5. People who are working in my chosen field have influenced me in my selection of a vocational goal.
6. No one has influenced me in the selection of my vocational goal. The choice was my own.

X. APPLICATION

1. I know how to study.
2. I do well on tests.
3. I like to study.
4. I enjoy learning.
5. I would rather go to work than go to school.
6. I will have to learn how to study better in order to be successful in college.
7. I am really motivated to go to school.
8. Studying is the most important thing for a college student.
9. There are other aspects of college just as important as studying, such as extra-curricular activities.
10. Getting good grades is more important than learning.
11. Learning is more important than grades.
12. I am content with making a "C" average.
13. I won't be happy unless I make much better than a "C" average.

XI. PARENTS

1. My parents are confident that I can do college work.
2. My parents want me to go to college.
3. I would rather go to college than get a job.
4. My parents think I should go to work and not bother with college.

XII. MOTIVATION

1. I am going to college because I can't think of anything better.
2. I am going to college because that is the only way I can achieve my goal.
3. I am going to college because I am primarily interested in extra-curricular activities.

4. I am going to college because my friends are in college.
5. I am going to college because my parents want me to go to college.
6. I am going to college because it's a good place to meet people.

APPENDIX E

DETAILED INSTRUCTION FOR THE ADMINISTRATION OF THE COLLEGE ATTITUDE SCALE

Your complete schedule follows. You will read aloud to the students all directions enclosed in boxes. You are not to depart from these directions.

When the students are seated and you are ready to begin the testing session, give one copy of the College Attitude Scale to each student. When each student has a copy, say:

> You should have received the questionnaire, an answer sheet and a sheet of instructions. If you do not have each of these raise your hand.

(PAUSE.)

If any students have failed to receive a complete set, issue the missing forms at this time. When you are certain that all students have the necessary forms, say:

> Place the separate answer sheet on the desk before you. In the upper right-hand corner PRINT your full name, last name first, in the space provided. (PAUSE.) Now, place the answer sheet aside and turn to the instructions. (PAUSE.) Read the following instructions silently while I read them aloud.
>
> This questionnaire is designed to help us meet your educational needs and to help you in your educational planning. It is not an examination; it is an opinion poll of the attitudes and needs of college freshmen. In order to complete the questionnaire, you are to indicate on the answer sheet the degree to which you agree with each of the statements. As you consider each statement, evaluate it in terms of the following ratings.
>
> 5. You STRONGLY AGREE with the statement.
> 4. You AGREE with the statement.
> 3. You are UNCERTAIN.
> 2. You DISAGREE with the statement.
> 1. You STRONGLY DISAGREE with the statement.

The questionnaire consists of 84 statements. You will respond to each of the 84 statements on the separate answer sheet by placing a circle around the number (1, 2, 3, 4, or 5) which most accurately reflects your opinion of the statement.

Now try SAMPLE STATEMENT A.

SAMPLE STATEMENT A: Women are better drivers than men.

Find Sample Statement A on the separate answer sheet. Evaluate this statement in terms of the following ratings.

5. You STRONGLY AGREE with the statement.
4. You AGREE with the statement.
3. You are UNCERTAIN.
2. You DISAGREE with the statement.
1. You STRONGLY DISAGREE with the statement.

(PAUSE.)

You should have circled on the answer sheet a number 1, 2, 3, 4, or 5. Are there any questions?

If there are any questions, clarify the student's task and, say:

Now try SAMPLE STATEMENT B.

SAMPLE STATEMENT B: American Education is better today than it was 50 years ago.

Allow the students time to rate SAMPLE STATEMENT B. and, say:

Are there any questions?

Clarify any questions at this time, and say:

You are now ready to complete the questionnaire. Remember that you must respond to each statement as best you can. Do not spend too much time on any one item. ANSWER EACH ITEM as you come to it. DO NOT omit any. There is no time limit. You will be allowed to complete the questionnaire. If you are interested in the results of this opinion poll, write the word "interested" in the upper left-hand corner of your answer sheet and we will let you know the results.

(PAUSE.)

There should be no talking. Ready, begin.

Allow time for each student to complete the questionnaire.

APPENDIX F

TABLE 29

INTERCORRELATION MATRIX OF THE 42 ITEMS MAKING UP
THE FIRST SIX FACTORS WITH COMMUNALITIES IN THE MAIN DIAGONAL

Item Number	Item Number						
	15	22	27	42	49	58	62
15	(.28)						
22	-.19	(.44)					
27	.12	.07	(.38)				
42	.04	.09	.40	(.50)			
49	.21	-.10	.33	.18	(.23)		
58	.19	-.02	.52	.56	.17	(.10)	
62	-.14	-.32	.33	.17	.21	.28	(.44)
4	.14	-.03	.27	.40	-.02	.34	.12
17	.22	-.02	.34	.29	.12	.31	.17
29	.34	.31	.21	.35	.15	.40	-.13
31	.34	.17	.42	.45	.18	.48	-.00
37	.07	.20	.03	-.04	-.07	-.08	-.17
51	-.04	-.19	.28	.43	.19	.39	.23
64	.14	.07	.33	.40	.19	.56	.28
1	.41	.00	.19	.37	.12	.44	.10
19	-.15	.49	-.01	-.11	-.11	-.09	-.38
41	.27	.01	.44	.33	.12	.60	.25
55	-.24	-.13	.38	.23	.16	.20	.44
66	.07	-.29	.33	.46	.10	.58	.33
76	.24	-.28	.29	.22	.21	.27	.28
82	.05	-.07	.29	.49	.16	.38	.21
6	.19	.27	.29	.27	.14	.43	-.07
16	.41	.03	.13	.32	.25	.42	-.07
21	.21	.39	.23	.26	.09	.43	-.05
43	.20	.21	.32	.21	.17	.26	.06
50	.27	.06	.05	.34	.05	.34	-.23
56	.22	-.01	.19	.21	.16	.36	-.04
7	-.04	.01	-.08	.08	.19	.08	.16
8	-.08	.19	.12	-.02	.26	-.10	.07
24	.14	.03	.01	.13	.17	.02	-.02
33	.24	.30	.27	.18	.12	.15	-.20
44	-.17	.02	.06	.17	.04	.21	.27
52	.10	.01	-.02	.08	.17	.01	.01
59	.18	-.09	.23	.27	.13	.17	-.02
69	.20	.14	.15	.24	.15	.08	-.13
2	.09	.03	.01	.21	.18	.29	.09
20	.16	.13	.26	.20	.07	.25	-.06
39	.22	-.07	.01	.08	.13	.10	.16
53	-.21	-.17	-.16	-.03	.07	-.19	.11
67	-.01	-.01	.05	.18	.23	.07	.18
74	.10	.05	-.03	.16	.11	-.10	.03
80	.13	.08	.00	.01	.02	.02	-.19

TABLE 29. Continued.

Item Number	Item Number						
	4	17	29	31	37	51	64
15							
22							
27							
42							
49							
58							
62							
4	(.45)						
17	.34	(.52)					
29	.27	.33	(.76)				
31	.29	.43	.70	(.65)			
37	-.08	.07	.07	-.09	(.19)		
51	.46	.41	.11	.23	.06	(.47)	
64	.36	.46	.40	.32	.13	.47	(.56)
1	.54	.37	.43	.36	-.06	.30	.43
19	-.22	-.17	.05	-.06	.36	-.22	-.05
41	.41	.50	.39	.57	-.06	.36	.50
55	.09	.13	-.04	.01	.03	.35	.32
66	.26	.44	.13	.37	-.10	.49	.40
76	-.05	.21	.04	.16	-.07	.04	.20
82	.30	.34	.21	.30	.08	.28	.39
6	.27	.38	.64	.47	.00	.15	.46
16	.31	.24	.47	.41	-.09	.29	.41
21	.10	.22	.68	.45	.12	.07	.31
43	-.07	.12	.43	.46	-.06	-.03	.05
50	.19	.15	.58	.44	.04	.26	.23
56	.34	.25	.36	.32	.07	.40	.32
7	.02	.03	.17	.04	.00	.06	.22
8	-.13	.13	.08	.03	.23	-.01	.06
24	.05	.26	.22	.17	.04	.11	.22
33	.22	.19	.69	.47	.06	.00	.13
44	.31	.14	.07	.06	-.09	.32	.33
52	.09	.20	.23	.14	-.03	.17	.10
59	.34	.34	.43	.30	-.06	.16	.26
69	.30	.23	.58	.43	.05	.10	.21
2	.13	.24	.27	.38	-.11	.24	.31
20	.37	.18	.46	.32	.04	.19	.23
39	.18	.19	.15	.20	-.04	.19	.27
53	-.01	.00	-.26	-.16	-.02	.30	.00
67	.17	.23	.10	.11	-.00	.36	.25
74	-.09	.17	.17	.02	.26	.03	.15
80	.15	.28	.30	.21	-.01	.05	.05

TABLE 29. Continued.

Item Number	Item Number						
	1	19	41	55	66	76	82
15							
22							
27							
42							
49							
58							
62							
4							
17							
29							
31							
37							
51							
64							
1	(.66)						
19	-.27	(.54)					
41	.47	-.17	(.51)				
55	.08	-.22	.05	(.38)			
66	.37	-.28	.46	.34	(.49)		
76	.23	-.30	.13	.33	.32	(.25)	
82	.38	-.12	.44	.46	.48	.35	(.41)
6	.37	.04	.28	.05	.10	.18	.10
16	.43	-.13	.18	.12	.26	.21	.13
21	.21	.24	.29	.01	.08	-.07	.16
43	.22	-.01	.10	-.09	.15	.16	-.04
50	.25	.08	.11	-.13	.18	.01	-.06
56	.24	-.09	.17	.18	.25	.17	.16
7	.06	-.00	-.05	.01	-.02	.00	-.09
8	-.17	.23	.03	.04	-.14	-.11	.12
24	.06	.08	.03	.03	.02	-.06	.04
33	.34	.11	.20	-.09	.00	.00	.09
44	.18	-.14	.11	.32	.22	-.12	.18
52	.10	.03	.02	-.10	.07	-.10	-.10
59	.34	-.13	.20	-.00	.22	.04	.19
69	.36	.00	.13	-.11	.06	-.05	.13
2	.27	-.11	.25	.06	.26	-.06	-.04
20	.24	.08	.20	.12	.00	.06	.18
39	.23	-.10	.14	.11	.15	-.06	-.04
53	-.13	-.12	-.08	.34	.16	-.03	.11
67	.19	-.16	.07	.29	.20	-.02	.17
74	-.05	.06	-.15	.03	-.10	-.01	.04
80	.08	.08	.09	-.22	.04	.01	-.11

TABLE 29. Continued.

Item Number	Item Number						
	6	16	21	43	50	56	7
15							
22							
27							
42							
49							
58							
62							
4							
17							
29							
31							
37							
51							
64							
1							
19							
41							
55							
66							
76							
82							
6	(.57)						
16	.42	(.70)					
21	.52	.34	(.52)				
43	.28	.26	.34	(.25)			
50	.52	.41	.45	.21	(.42)		
56	.36	.64	.42	.14	.43	(.59)	
7	.25	.15	.18	.08	.15	.32	(.54)
8	.11	-.14	.16	.01	-.07	.00	.35
24	.22	.07	.17	-.02	.17	.25	.48
33	.46	.25	.47	.27	.45	.16	-.10
44	.10	.07	.03	-.07	-.01	.25	.37
52	.24	.14	.24	.09	.28	.40	.66
59	.29	.22	.22	.08	.29	.16	.09
69	.38	.26	.30	.27	.44	.15	.01
2	.36	.28	.14	.05	.27	.17	.50
20	.58	.28	.31	.15	.36	.35	.07
39	.14	.19	.07	-.07	.16	.18	.47
53	-.23	-.11	-.22	-.38	-.14	.08	.10
67	.22	.13	.10	-.03	.12	.16	.34
74	.06	.04	.11	-.01	.06	.01	.34
80	.16	.15	.16	.30	.12	.04	.03

TABLE 29. Continued.

Item Number	Item Number						
	8	24	33	44	52	59	69
15							
22							
27							
42							
49							
58							
62							
4							
17							
29							
31							
37							
51							
64							
1							
19							
41							
55							
66							
76							
82							
6							
16							
21							
43							
50							
56							
7							
8	(.32)						
24	.43	(.62)					
33	.03	-.04	(.70)				
44	.17	.48	-.14	(.52)			
52	.27	.69	.04	.36	(.77)		
59	.03	-.01	.50	-.10	.11	(.54)	
69	.09	-.02	.69	-.10	.12	.59	(.68)
2	.12	.45	.02	.43	.48	-.06	.04
20	-.11	-.05	.39	-.05	.07	.46	.44
39	.14	.54	-.07	.47	.59	-.07	.07
53	.03	.18	-.27	.24	.23	-.06	-.26
67	.26	.46	.03	.43	.50	-.07	.02
74	.26	.31	.10	.05	.30	.16	.20
80	.14	-.06	.16	-.17	-.06	.37	.34

TABLE 29. Continued.

Item Number	Item Number						
	2	20	39	53	67	74	80
15							
22							
27							
42							
49							
58							
62							
4							
17							
29							
31							
37							
51							
64							
1							
19							
41							
55							
66							
76							
82							
6							
16							
21							
43							
50							
56							
7							
8							
24							
33							
44							
52							
59							
69							
2	(.60)						
20	-.08	(.42)					
39	.57	-.12	(.60)				
53	.19	-.22	.39	(.48)			
67	.51	-.13	.61	.57	(.62)		
74	.17	-.01	.21	-.04	.22	(.24)	
80	-.03	.18	-.11	-.28	-.19	.07	(.22)

APPENDIX G

TABLE 30

LOADINGS RESULTING FROM VARIMAX ROTATION OF FOUR FACTORS

Item Number	FACTORS 1	2	3	4
1	.47	.41	.12	-.33
2	.13	.15	.68	-.10
4	.31	.41	.11	-.24
6	.63	.24	.24	.15
7	.06	-.04	.68	.09
8	-.05	.03	.33	.48
15	.45	.00	.07	-.28
16	.55	.22	.21	-.29
17	.31	.48	.20	-.07
19	.09	-.25	-.05	.64
20	.55	.19	-.08	.07
21	.58	.18	.16	.35
22	.26	-.10	-.00	.60
24	.04	.02	.74	.17
27	.21	.60	-.09	.16
29	.83	.19	.19	.17
31	.64	.39	.13	.01
33	.73	.04	-.08	.17
37	.02	-.02	.00	.38
39	-.00	.08	.76	-.15
41	.30	.59	.01	-.08
42	.28	.58	.10	.01
43	.43	.09	-.05	.08
44	-.17	.32	.56	.01
49	.11	.24	.20	-.00
50	.63	.01	.23	-.05
51	.06	.56	.26	-.18
52	.16	-.10	.82	.02
53	-.45	.12	.39	-.13
55	-.27	.59	.08	.03
56	.39	.25	.35	-.13
58	.35	.68	.04	-.07
59	.53	.18	-.04	-.10
62	-.28	.51	.08	-.14
64	.26	.62	.26	.05
66	.07	.65	.09	-.30
67	-.11	.24	.70	-.01
69	.70	.03	.01	.05
74	.08	-.04	.32	.22
76	.04	.37	-.11	-.23
80	.38	-.07	-.10	.04
82	.04	.67	-.05	.04

TABLE 31

LOADINGS RESULTING FROM VARIMAX ROTATION OF SEVEN FACTORS

Item Number	FACTORS						
	1	2	3	4	5	6	7
1	.49	.11	.33	.22	.16	-.29	-.20
2	.22	.69	-.08	.11	.19	-.10	-.18
4	.48	.07	.31	.23	-.17	-.14	-.29
6	.29	.21	.32	.42	.32	.21	.00
7	-.07	.66	-.02	.19	.05	.06	.22
8	.00	.38	.09	-.24	.03	.37	.31
15	.03	.08	.26	.21	.37	-.29	.02
16	.22	.12	.16	.69	.21	-.17	.03
17	.51	.22	.32	-.02	.12	-.12	.07
19	-.21	-.03	-.02	-.01	.09	.69	-.10
20	.20	-.14	.44	.41	.04	.17	.05
21	.24	.15	.23	.35	.38	.40	.00
22	-.01	.03	.07	.02	.21	.65	-.22
24	.03	.76	.01	.02	.03	.12	.10
27	.58	-.08	.09	.03	.19	.10	.28
29	.29	.20	.54	.35	.46	.22	-.08
31	.48	.16	.33	.18	.50	.01	-.09
33	.13	-.06	.68	.17	.26	.22	-.08
37	-.03	-.01	.06	.02	-.10	.39	.10
39	.12	.76	-.03	.05	-.04	-.16	-.11
41	.68	.04	.13	-.03	.27	-.10	-.16
42	.60	.08	.15	.19	.07	.03	.05
43	.11	-.02	.13	.14	.54	.04	.14
44	.33	.53	-.19	.05	-.23	.03	-.10
49	.17	.20	.09	.06	.11	-.08	.39
50	.08	.18	.35	.51	.23	.06	-.15
51	.55	.19	.08	.24	-.30	-.12	-.02
52	-.10	.81	.12	.21	.02	.01	.07
53	.07	.35	-.18	-.05	.56	-.11	-.01
55	.49	.02	-.16	.08	-.36	.01	.35
56	.21	.23	.08	.72	-.02	.00	.11
58	.72	.01	-.08	.33	.34	-.03	-.01
59	.19	-.04	.72	.11	-.02	-.09	.11
62	.43	.09	-.20	-.18	-.07	-.25	.35
64	.63	.23	.12	.23	.02	.08	.06
66	.65	.06	-.02	.11	.01	-.31	.05
67	.24	.69	-.01	.02	-.24	-.02	.02
69	.09	.03	.80	.12	.14	.07	-.02
74	-.08	.34	.23	-.06	-.02	.15	.28
76	.28	-.13	-.05	.13	.13	-.30	.41
80	-.04	-.06	.37	-.01	.27	.01	.06
82	.64	-.06	.10	-.01	-.14	.02	.18

APPENDIX H

TABLE 32

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1
FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
60-62	1	79	98.7
57-59	4	78	93.7
54-56	13	74	77.2
51-53	20	61	51.9
48-50	19	41	27.8
45-47	11	22	13.9
42-44	6	11	6.3
39-41	0	5	6.3
36-38	1	5	5.1
33-35	0	4	5.1
30-32	0	4	5.1
27-29	1	4	3.8
24-26	1	3	2.8
21-23	1	2	0.3
18-20	0	1	0.3
15-17	1	1	0.0

Mean = 48.97
Standard Deviation = 7.21

TABLE 33

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2 FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	3	79	96.2
54-56	1	76	94.9
51-53	12	75	79.7
48-50	17	63	58.2
45-47	29	46	21.5
42-44	11	17	7.6
39-41	3	6	3.8
36-38	0	3	3.8
33-35	0	3	3.8
30-32	0	3	3.8
27-29	0	3	3.8
24-26	1	3	2.8
21-23	1	2	0.3
18-20	0	1	0.3
15-17	1	1	0.0

Mean = 46.48
Standard Deviation = 7.35

TABLE 34

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1 FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
60-62	1	56	98.2
57-59	4	55	75.0
54-56	7	51	73.6
51-53	11	44	58.9
48-50	13	33	35.7
45-47	10	20	17.9
42-44	5	10	8.9
39-41	0	5	8.9
36-38	1	5	7.1
33-35	0	4	7.1
30-32	0	4	7.1
27-29	1	4	5.4
24-26	1	3	3.6
21-23	1	2	1.8
18-20	0	1	1.8
15-17	1	1	0.0

Mean = 48.14
Standard Deviation = 8.24

TABLE 35

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2
FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	3	56	94.6
54-56	2	53	91.1
51-53	9	51	75.0
48-50	20	42	39.3
45-47	11	22	19.6
42-44	8	11	5.4
39-41	1	3	3.6
36-38	0	2	3.6
33-35	0	2	3.6
30-32	0	2	3.6
27-29	0	2	3.6
24-26	0	2	3.6
21-23	1	2	1.8
18-20	0	1	1.8
15-17	1	1	0.0

Mean = 46.10
Standard Deviation = 6.53

TABLE 36

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1
FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
54-56	6	23	73.9
51-53	9	17	34.8
48-50	6	8	8.7
45-47	1	2	4.3
42-44	1	1	0.0

Mean = 51.00
Standard Deviation = 2.75

TABLE 37

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2 FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	1	23	95.6
54-56	0	22	95.6
51-53	5	22	73.9
48-50	8	17	39.1
45-47	6	9	13.0
42-44	2	3	4.3
39-41	0	1	4.3
36-38	0	1	4.3
33-35	0	1	4.3
30-32	0	1	4.3
27-29	0	1	4.3
24-26	1	1	0.0

Mean = 47.94
Standard Deviation = 5.69

TABLE 38

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1
FOR WHITE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
60-62	1	68	98.5
57-59	4	67	92.7
54-56	10	63	77.9
51-53	16	53	54.4
48-50	15	37	32.4
45-47	11	22	16.2
42-44	6	11	7.4
39-41	0	5	7.4
36-38	1	5	5.9
33-35	0	4	5.9
30-32	0	4	5.9
27-29	1	4	4.4
24-26	1	3	2.9
21-23	1	2	1.5
18-20	0	1	1.5
15-17	1	1	0.0

Mean = 48.57
Standard Deviation = 7.65

TABLE 39

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2 FOR WHITE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	3	68	95.6
54-56	2	65	77.9
51-53	15	63	70.6
48-50	23	48	36.8
45-47	12	25	19.1
42-44	9	13	5.9
39-41	1	4	4.4
36-38	0	3	4.4
33-35	0	3	4.4
30-32	0	3	4.4
27-29	0	3	4.4
24-26	1	3	2.9
21-23	1	2	1.5
18-20	0	1	1.5
15-17	1	1	0.0

Mean = 46.10
Standard Deviation = 6.83

TABLE 40

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
54-56	3	11	72.7
51-53	4	8	36.4
48-50	4	4	0.0

Mean = 51.45
Standard Deviation = 2.20

TABLE 41

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	1	11	90.9
54-56	0	10	90.9
51-53	2	10	72.7
48-50	3	8	45.5
45-47	5	5	0.0

Mean = 48.82
Standard Deviation = 3.24

TABLE 42

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1
FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	2	39	94.9
54-56	5	37	82.1
51-53	13	32	48.7
48-50	11	19	20.5
45-47	4	8	10.3
42-44	3	4	2.6
39-41	0	1	2.6
36-38	0	1	2.6
33-35	0	1	2.6
30-32	0	1	2.6
27-29	0	1	2.6
24-26	0	1	2.6
21-23	1	1	0.0

Mean = 49.90
Standard Deviation = 5.89

TABLE 43

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2 FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
54-56	1	39	97.4
51-53	3	38	89.7
48-50	7	35	71.8
45-47	19	28	23.1
42-44	4	9	12.8
39-41	2	5	7.7
36-38	0	3	7.7
33-35	0	3	7.7
30-32	0	3	7.7
27-29	0	3	7.7
24-26	1	3	5.1
21-23	1	2	2.6
18-20	0	1	2.6
15-17	1	1	0.0

Mean = 44.69
Standard Deviation = 7.47

TABLE 44

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_1
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
60-62	1	40	97.5
57-59	2	39	92.5
54-56	8	37	72.5
51-53	7	29	55.0
48-50	8	22	35.0
45-47	7	14	17.5
42-44	3	7	10.0
39-41	0	4	10.0
36-38	1	4	7.5
33-35	0	3	7.5
30-32	0	3	7.5
27-29	1	3	5.0
24-26	1	2	2.5
21-23	0	1	2.5
18-20	0	1	2.5
15-17	1	1	0.0

Mean = 48.08
Standard Deviation = 8.21

TABLE 45

FREQUENCY DISTRIBUTION OF CAS SCALE I SCORES AT T_2
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
57-59	3	40	92.5
54-56	0	37	92.5
51-53	9	37	70.0
48-50	10	28	45.0
45-47	10	18	20.0
42-44	7	8	2.5
39-41	1	1	0.0

Mean = 48.22
Standard Deviation = 4.29

TABLE 46

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR ALL STUDENTS ON SCALE I

Difference Score Range	f	cf
26 - 30	2	79
21 - 25	0	77
16 - 20	1	77
11 - 15	1	76
6 - 10	0	75
1 - 5	15	75
(-4)- 0	34	60
(-9)-(-5)	21	26
(-14)-(-10)	2	5
(-19)-(-15)	0	3
(-24)-(-20)	1	3
(-29)-(-25)	1	2
(-34)-(-30)	0	1
(-39)-(-35)	0	1
(-44)-(-40)	1	1
Mean Difference -2.54		

TABLE 47

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR PASS AND FAIL STUDENTS ON SCALE I

Difference Score Range	f	
	Pass	Fail
26 - 30	1	1
21 - 25	0	0
16 - 20	0	0
11 - 15	0	0
6 - 10	0	0
1 - 5	4	11
(-4)- 0	16	18
(-9)-(-5)	14	7
(-14)-(-10)	1	1
(-19)-(-15)	0	1
(-24)-(-20)	2	1
(-29)-(-25)	0	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	1	0
TOTAL	39	40
MEAN DIFFERENCE	-5.21	+.05

TABLE 48

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR MALE AND FEMALE STUDENTS ON SCALE I

Difference Score Range	f	
	Male	Female
26 - 30	2	0
21 - 25	0	0
16 - 20	1	0
11 - 15	1	0
6 - 10	0	0
1 - 5	13	2
(-4)- 0	20	14
(-9)-(-5)	15	6
(-14)-(-10)	2	0
(-19)-(-15)	0	0
(-24)-(-20)	0	1
(-29)-(-25)	1	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	1	0
TOTAL	56	23
MEAN DIFFERENCE	-2.11	-3.70

TABLE 49

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR WHITE AND NEGRO STUDENTS ON SCALE I

Difference Score Range	f	
	White	Negro
26 - 30	2	0
21 - 25	0	0
16 - 20	0	0
11 - 15	0	0
6 - 10	0	0
1 - 5	14	1
(-4)- 0	28	6
(-9)-(-5)	17	4
(-14)-(-10)	2	0
(-19)-(-15)	1	0
(-24)-(-20)	3	0
(-29)-(-25)	0	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	1	0
(-49)-(-45)	0	0
TOTAL	68	11
MEAN DIFFERENCE	-2.53	-2.64

APPENDIX I

TABLE 50

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1 FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
66-68	2	79	97.5
63-65	3	77	93.7
60-62	5	74	87.3
57-59	3	69	83.5
54-56	10	66	70.7
51-53	12	56	55.7
48-50	13	44	39.2
45-47	6	31	31.7
42-44	8	25	21.5
39-41	3	17	17.7
36-38	7	14	8.9
33-35	3	7	5.1
30-32	3	4	1.3
27-29	0	1	1.3
24-26	0	1	1.3
21-23	1	1	0.0

Mean = 48.61
Standard Deviation = 9.38

TABLE 51

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2 FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	2	79	97.5
60-62	3	77	93.7
57-59	3	74	89.8
54-56	9	71	78.4
51-53	7	62	69.6
48-50	9	55	58.2
45-47	3	46	54.4
42-44	8	43	44.3
39-41	7	35	35.4
36-38	9	28	24.1
33-35	9	19	12.7
30-32	7	10	3.8
27-29	1	3	2.5
24-26	1	2	1.3
21-23	0	1	1.3
18-20	1	1	0.0

Mean = 43.92
Standard Deviation = 9.83

TABLE 52

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1
FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
66-68	1	56	98.2
63-65	2	55	94.6
60-62	4	53	87.5
57-59	3	49	82.1
54-56	7	46	69.6
51-53	7	39	57.1
48-50	9	32	41.1
45-47	4	23	33.9
42-44	5	19	25.0
39-41	1	14	23.2
36-38	7	13	10.7
33-35	2	6	7.1
30-32	3	4	1.8
27-29	0	1	1.8
24-26	0	1	1.8
21-23	1	1	0.0

Mean = 47.98
Standard Deviation = 9.86

TABLE 53

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2 FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	1	56	98.2
60-62	1	55	96.4
57-59	2	54	92.9
54-56	7	52	80.4
51-53	5	45	71.4
48-50	6	40	60.7
45-47	1	34	58.9
42-44	8	33	44.6
39-41	5	25	35.7
36-38	7	20	23.2
33-35	5	13	14.3
30-32	6	8	3.6
27-29	1	2	1.8
24-26	1	1	0.0

Mean = 43.27
Standard Deviation = 9.74

TABLE 54

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1 FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
66-68	1	23	95.7
63-65	1	22	91.3
60-62	1	21	87.0
57-59	0	20	87.0
54-56	3	20	73.9
51-53	5	17	52.1
48-50	4	12	34.8
45-47	2	8	26.1
42-44	3	6	13.0
39-41	2	3	4.4
36-38	0	1	4.4
33-35	1	1	0.0

Mean = 50.13
Standard Deviation = 7.88

TABLE 55

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2 FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	1	23	95.7
60-62	2	22	87.0
57-59	1	20	82.6
54-56	2	19	73.9
51-53	2	17	65.2
48-50	3	15	52.1
45-47	2	12	43.5
42-44	0	10	43.5
39-41	2	10	34.8
36-38	3	8	21.7
33-35	4	5	4.4
30-32	1	1	0.0

Mean = 45.52
Standard Deviation = 9.88

TABLE 56

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1 FOR WHITE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
66-68	2	68	97.1
63-65	2	66	94.1
60-62	4	64	88.2
57-59	3	60	83.8
54-56	9	57	70.6
51-53	10	48	55.9
48-50	12	38	38.2
45-47	6	26	29.4
42-44	4	20	23.5
39-41	2	16	20.6
36-38	7	14	10.3
33-35	3	7	5.9
30-32	3	4	1.5
27-29	0	1	1.5
24-26	0	1	1.5
21-23	1	1	0.0

Mean = 48.44
Standard Deviation = 9.62

TABLE 57

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2 FOR WHITE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	2	68	97.1
60-62	2	66	94.1
57-59	3	64	89.7
54-56	8	61	77.9
51-53	4	53	72.1
48-50	8	49	60.3
45-47	3	41	55.9
42-44	8	38	44.1
39-41	6	30	35.3
36-38	6	24	26.4
33-35	8	18	14.7
30-32	7	10	4.4
27-29	1	3	2.9
24-26	1	2	1.5
21-23	0	1	1.5
18-20	1	1	0.0

Mean = 43.65
Standard Deviation = 9.98

TABLE 58

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	1	11	90.9
60-62	1	10	81.8
57-59	0	9	81.8
54-56	1	9	72.7
51-53	2	8	54.5
48-50	1	6	45.5
45-47	0	5	45.5
42-44	4	5	9.0
39-41	1	1	0.0

Mean = 49.64
Standard Deviation = 7.60

TABLE 59

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
60-62	1	11	90.9
57-59	0	10	90.9
54-56	1	10	81.8
51-53	3	9	54.5
48-50	1	6	45.5
45-47	0	5	45.5
42-44	0	5	45.5
39-41	1	5	36.4
36-38	3	4	9.1
33-35	1	1	0.0

Mean = 45.64
Standard Deviation = 8.69

TABLE 60

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1
FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	2	39	94.9
60-62	1	37	92.3
57-59	2	36	87.2
54-56	5	34	74.4
51-53	6	29	59.0
48-50	6	23	43.6
45-47	5	17	30.8
42-44	3	12	23.1
39-41	2	9	17.9
36-38	3	7	10.3
33-35	2	4	5.1
30-32	2	2	0.0

Mean = 48.05
Standard Deviation = 8.70

TABLE 61

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2
FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
54-56	3	39	92.3
51-53	4	36	82.1
48-50	6	32	66.7
45-47	2	26	61.5
42-44	3	24	53.8
39-41	4	21	43.6
36-38	4	17	33.3
33-35	6	13	17.9
30-32	5	7	5.1
27-29	0	2	5.1
24-26	1	2	2.6
21-23	0	1	2.6
18-20	1	1	0.0

Mean = 41.03
Standard Deviation = 8.84

TABLE 62

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_1
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
66-68	2	40	95.0
63-65	1	38	92.5
60-62	4	37	82.5
57-59	1	33	80.0
54-56	5	32	67.5
51-53	6	27	52.5
48-50	7	21	35.0
45-47	1	14	32.5
42-44	5	13	20.0
39-41	1	8	17.5
36-38	4	7	7.5
33-35	1	3	5.0
30-32	1	2	2.5
27-29	0	1	2.5
24-26	0	1	2.5
21-23	1	1	0.0

Mean = 49.15
Standard Deviation = 9.96

TABLE 63

FREQUENCY DISTRIBUTION OF CAS SCALE II SCORES AT T_2
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
63-65	2	40	95.0
60-62	3	38	87.5
57-59	3	35	80.0
54-56	6	32	65.0
51-53	3	26	57.5
48-50	3	23	50.0
45-47	1	20	47.5
42-44	5	19	35.0
39-41	3	14	27.5
36-38	5	11	15.0
33-35	3	6	7.5
30-32	2	3	2.5
27-29	1	1	0.0

Mean = 46.75
Standard Deviation = 9.93

TABLE 64

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR ALL STUDENTS ON SCALE II

Difference Score Range	f	cf
21 - 25	1	79
16 - 20	1	78
11 - 15	1	77
6 - 10	7	76
1 - 5	10	69
(-4)- 0	23	59
(-9)-(-5)	14	36
(-14)-(-10)	10	22
(-19)-(-15)	8	12
(-24)-(-20)	3	4
(-29)-(-25)	0	1
(-34)-(-30)	0	1
(-39)-(-35)	0	1
(-44)-(-40)	0	1
(-49)-(-45)	1	1

MEAN DIFFERENCE -4.68

TABLE 65

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR PASS AND FAIL STUDENTS ON SCALE II

Difference Score Range	f	
	Pass	Fail
21 - 25	0	1
16 - 20	0	1
11 - 15	1	0
6 - 10	3	4
1 - 5	1	9
(-4)- 0	12	11
(-9)-(-5)	8	6
(-14)-(-10)	6	4
(-19)-(-15)	5	3
(-24)-(-20)	2	1
(-29)-(-25)	0	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	0	0
(-49)-(-45)	1	0
TOTAL	39	40
MEAN DIFFERENCE	-9.03	-2.40

TABLE 66

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR MALE AND FEMALE STUDENTS ON SCALE II

Difference Score Range	f	
	Male	Female
21 - 25	1	0
16 - 20	1	0
11 - 15	1	0
6 - 10	4	3
1 - 5	7	3
(-4)- 0	15	8
(-9)-(-5)	10	4
(-14)-(-10)	10	0
(-19)-(-15)	4	4
(-24)-(-20)	2	1
(-29)-(-25)	0	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	0	0
(-49)-(-45)	1	0
TOTAL	56	23
MEAN DIFFERENCE	-4.71	-4.61

TABLE 67

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR WHITE AND NEGRO STUDENTS ON SCALE II

Difference Score Range	f	
	White	Negro
26 - 30	0	0
21 - 25	1	0
16 - 20	1	0
11 - 15	1	0
6 - 10	5	2
1 - 5	8	2
(-4)- 0	21	2
(-9)-(-5)	12	2
(-14)-(-10)	9	1
(-19)-(-15)	6	2
(-24)-(-20)	3	0
(-29)-(-25)	0	0
(-34)-(-30)	0	0
(-39)-(-35)	0	0
(-44)-(-40)	0	0
(-49)-(-45)	1	0
TOTAL	68	11
MEAN DIFFERENCE	-4.79	-4.00

APPENDIX J

TABLE 68

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1 FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
35-36	1	79	98.7
33-34	3	78	94.9
31-32	2	75	92.4
29-30	3	73	88.6
27-28	8	70	78.4
25-26	6	62	70.8
23-24	11	56	57.0
21-22	11	45	43.0
19-20	13	34	26.6
17-18	9	21	15.2
15-16	6	12	7.6
13-14	4	6	2.5
11-12	1	3	1.3
9-10	1	1	0.0

Mean = 21.92
Standard Deviation = 5.43

TABLE 69

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2 FOR THE TOTAL GROUP, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	79	96.2
31-32	2	76	93.7
29-30	11	74	79.7
27-28	13	63	63.3
25-26	13	50	46.8
23-24	11	37	32.9
21-22	6	26	25.3
19-20	5	20	19.0
17-18	6	15	11.4
15-16	3	9	7.6
13-14	4	6	2.5
11-12	2	2	0.0

Mean = 23.96
Standard Deviation = 5.35

TABLE 70

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1
FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	56	94.6
31-32	1	53	92.9
29-30	1	52	91.1
27-28	4	51	83.9
25-26	4	47	76.8
23-24	8	43	62.5
21-22	8	35	48.2
19-20	12	27	26.8
17-18	6	15	16.1
15-16	5	9	7.1
13-14	3	4	1.8
11-12	1	1	0.0

Mean = 21.43
Standard Deviation = 5.06

TABLE 71

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2
FOR MALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	56	94.6
31-32	2	53	91.1
29-30	4	51	83.9
27-28	9	47	67.9
25-26	10	38	50.0
23-24	9	28	33.9
21-22	5	19	25.0
19-20	4	14	77.9
17-18	3	10	12.5
15-16	3	7	7.1
13-14	2	4	3.6
11-12	2	2	0.0

Mean = 23.77
Standard Deviation = 5.40

TABLE 72

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1 FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
35-36	1	23	95.7
33-34	0	22	95.7
31-32	1	22	91.3
29-30	2	21	82.6
27-28	4	19	65.2
25-26	2	15	56.5
23-24	3	13	43.5
21-22	3	10	30.4
19-20	1	7	26.1
17-18	3	6	13.0
15-16	1	3	8.7
13-14	1	2	4.4
11-12	0	1	4.4
9-10	1	1	0.0

Mean = 23.13
Standard Deviation = 6.07

TABLE 73

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2 FOR FEMALE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
29-30	7	23	69.6
27-28	4	16	52.1
25-26	3	12	39.1
23-24	2	9	30.4
21-22	1	7	26.1
19-20	1	6	21.7
17-18	3	5	8.7
15-16	0	2	8.7
13-14	2	2	0.0

Mean = 24.43
Standard Deviation = 5.18

TABLE 74

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1 FOR WHITE STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	68	95.6
31-32	1	65	94.1
29-30	2	64	91.2
27-28	3	62	86.8
25-26	6	59	77.9
23-24	11	53	61.8
21-22	10	42	47.1
19-20	13	32	27.9
17-18	9	19	14.7
15-16	5	10	7.4
13-14	3	5	2.9
11-12	1	2	1.5
9-10	1	1	0.0

Mean = 21.31
Standard Deviation = 5.04

TABLE 75

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2 FOR WHITE, STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	68	95.6
31-32	2	65	92.6
29-30	8	63	80.9
27-28	11	55	64.7
25-26	12	44	47.1
23-24	9	32	33.8
21-22	5	23	26.4
19-20	5	18	19.9
17-18	4	13	13.2
15-16	3	9	8.8
13-14	4	6	2.9
11-12	2	2	0.0

Mean = 23.84
Standard Deviation = 5.51

TABLE 76

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
35-36	1	11	90.9
33-34	0	10	90.9
31-32	1	10	81.8
29-30	1	9	72.7
27-28	5	8	27.3
25-26	0	3	27.3
23-24	0	3	27.3
21-22	1	3	18.1
19-20	0	2	18.1
17-18	0	2	18.1
15-16	1	2	9.0
13-14	1	1	0.0

Mean = 25.73
Standard Deviation = 6.11

TABLE 77

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2 FOR NEGRO STUDENTS, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
29-30	3	11	72.7
27-28	2	8	54.5
25-26	1	6	45.5
23-24	2	5	27.3
21-22	1	3	18.1
19-20	0	2	18.1
17-18	2	2	0.0

Mean = 24.73
Standard Deviation = 4.14

TABLE 78

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1
FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
29-30	1	39	97.4
27-28	4	38	87.2
25-26	3	34	79.5
23-24	6	31	64.1
21-22	9	25	41.0
19-20	6	16	25.6
17-28	6	10	10.3
15-16	1	4	7.7
13-14	2	3	3.7
11-12	1	1	0.0

Mean = 21.80
Standard Deviation = 4.22

TABLE 79

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2
FOR STUDENTS WHO PASSED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
31-32	1	39	97.4
29-30	3	38	89.7
27-28	7	35	71.8
25-26	6	28	56.4
23-24	7	22	38.5
21-22	5	15	25.6
19-20	3	10	17.9
17-18	2	7	12.8
15-16	3	5	5.1
13-14	2	2	0.0

Mean = 23.33
Standard Deviation = 4.59

TABLE 80

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_1
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
35-36	1	40	97.5
33-34	3	39	90.0
31-32	2	36	85.0
29-30	2	34	80.0
27-28	4	32	70.0
25-26	3	28	62.5
23-24	5	25	50.0
21-22	2	20	45.0
19-20	7	18	27.5
17-18	3	11	20.0
15-16	5	8	7.5
13-14	2	3	3.7
11-12	0	1	2.5
9-10	1	1	0.0

Mean = 22.65
Standard Deviation = 6.30

TABLE 81

FREQUENCY DISTRIBUTION OF CAS SCALE III SCORES AT T_2
FOR STUDENTS WHO FAILED, THE MEAN AND STANDARD DEVIATION

Raw Score Interval	f	cf	Percent Below
33-34	3	40	92.5
31-32	1	37	90.0
29-30	8	36	70.0
27-28	6	28	55.0
25-26	7	22	37.5
23-24	4	15	27.5
21-22	1	11	25.0
19-20	2	10	20.0
17-18	4	8	10.0
15-16	0	4	10.0
13-14	2	4	5.0
11-12	2	2	0.0

Mean = 24.58
Standard Deviation = 5.93

TABLE 82

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR ALL STUDENTS ON SCALE III

Difference Score Range	f	cf
19 - 21	1	79
16 - 18	1	78
13 - 15	1	77
10 - 12	7	76
7 - 9	6	69
4 - 6	15	63
1 - 3	14	48
(-2)- 0	16	34
(-5)-(-3)	9	18
(-8)-(-6)	6	9
(-11)-(-9)	3	3

MEAN DIFFERENCE 2.09

TABLE 83

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR PASS AND FAIL STUDENTS ON SCALE III

Difference Score Range	f	
	Pass	Fail
19 - 21	0	1
16 - 18	1	0
13 - 15	0	1
10 - 12	2	4
7 - 9	4	2
4 - 6	8	7
1 - 3	8	7
(-2)- 0	7	9
(-5)-(-3)	5	4
(-8)-(-6)	2	4
(-11)-(-9)	2	1
TOTAL	39	40
MEAN DIFFERENCE	2.21	1.93

TABLE 84

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR MALE AND FEMALE STUDENTS ON SCALE III

Difference Score Range	f	
	Male	Female
19 - 21	1	0
16 - 18	1	0
13 - 15	1	0
10 - 12	4	3
7 - 9	5	1
4 - 6	11	4
1 - 3	9	5
(-2)- 0	11	5
(-5)-(-3)	6	3
(-8)-(-6)	6	0
(-11)-(-9)	1	2
TOTAL	56	23
MEAN DIFFERENCE	2.41	1.30

TABLE 85

FREQUENCY DISTRIBUTION OF DIFFERENCE SCORES
FOR WHITE AND NEGRO STUDENTS ON SCALE III

Difference Score Range	f	
	White	Negro
19 - 21	1	0
16 - 18	1	0
13 - 15	1	0
10 - 12	6	0
7 - 9	6	0
4 - 6	15	0
1 - 3	12	3
(-2)- 0	13	3
(-5)-(-3)	6	3
(-8)-(-6)	5	1
(-11)-(-9)	2	1
TOTAL	68	11
MEAN DIFFERENCE	2.56	-1.00

APPENDIX K

TABLE 86

SCORES FOR STUDENTS IN GROUP$_{212}$ (FAIL-WHITE-FEMALE)
ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
13	54	67	28	53	63	29	-1	-4	+1
28	51	55	24	51	62	29	0	+7	+5
57	44	33	9	48	40	19	+4	+7	+10
69	51	56	24	51	58	28	0	+2	+4
74	56	49	25	49	45	25	-7	-4	0
76	47	49	17	43	48	14	-4	-1	-3
TOTAL	303	309	127	295	316	144	-8	+7	+17
MEAN	50.50	51.50	21.67	49.17	52.67	24.00	-1.33	1.17	2.83

TABLE 87

SCORES FOR STUDENTS IN GROUP$_{222}$ (FAIL-NEGRO-FEMALE)
ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
03	54	42	27	57	36	30	+3	-6	+3
21	54	60	31	48	61	29	-6	+1	-2
30	54	42	35	50	34	25	-4	-8	-10
47	49	44	16	47	54	18	-2	+10	+2
52	51	52	29	51	37	24	0	-15	-5
66	49	41	27	49	37	29	0	-4	+2
78	51	49	22	45	51	18	-6	+2	-4
TOTAL	362	330	187	347	310	173	-15	-20	-14
MEAN	51.71	47.14	26.71	49.57	44.29	24.71	-2.14	-2.86	-2.00

TABLE 88

SCORES FOR STUDENTS IN GROUP$_{211}$ (FAIL-WHITE-MALE)

ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
01	17	21	25	47	44	17	+30	+23	-8
08	48	56	20	48	56	27	0	0	+7
10	49	48	28	46	34	34	-3	-14	+6
11	54	55	31	58	51	25	+4	-4	-6
14	51	47	14	47	37	12	-4	-10	-2
18	47	56	18	48	52	17	+1	-4	-1
22	46	30	34	44	31	34	-2	+1	0
27	47	44	20	48	42	25	+1	-2	+5
36	48	48	20	47	57	25	-1	+9	+5
37	57	63	29	53	60	23	-4	-3	-6
38	48	53	20	43	44	29	-5	-9	+9
40	44	38	16	45	40	13	+1	+2	-3
44	47	37	23	42	42	26	-5	+5	+3
48	54	50	19	50	54	24	-4	+4	+5
49	44	36	19	45	54	21	+1	+18	+2
50	48	48	18	50	63	28	+2	+5	+10
55	51	53	23	51	34	23	0	-19	0
58	47	52	23	47	43	27	-4	-9	+4
59	50	48	16	44	50	27	-6	+2	+11
60	54	62	25	43	50	25	-11	-12	0
62	51	60	33	52	55	30	+1	-5	-3
64	26	51	13	45	29	33	+19	-22	+20

TABLE 88. Continued.

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
67	28	51	15	43	36	30	+15	-15	+15
71	47	38	21	52	32	20	+5	-6	-1
72	60	60	19	59	57	11	-1	-3	-8
73	38	44	16	39	41	28	+1	-3	+12
77	57	68	34	51	56	32	-6	-12	-2
TOTAL	1258	1327	592	1287	1244	666	+25	-83	74
MEAN	46.59	49.15	21.93	47.67	46.07	24.67	.93	-3.07	2.74

TABLE 89

SCORES FOR STUDENTS IN GROUP$_{111}$ (PASS-WHITE-MALE)

ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
02	47	51	21	44	36	26	-3	-15	+5
04	53	62	25	45	49	25	-8	-13	0
06	21	35	26	47	48	16	+26	+13	-10
07	48	55	20	42	53	23	-6	-2	+3
09	48	49	18	50	44	23	+2	-5	+5
12	54	53	12	45	33	14	-9	-20	+2
15	50	58	24	49	52	24	-1	-6	0
16	50	48	17	23	31	20	-27	-17	+3
17	53	58	20	51	55	29	-2	-3	+9
19	58	65	23	15	20	16	-43	-45	-7
20	53	30	15	46	30	25	-7	0	+10
24	55	47	22	49	41	24	-6	-6	+2
26	44	42	17	41	41	22	-3	-1	+5
29	46	41	22	47	33	28	+1	-8	+6
32	50	46	20	52	56	26	+2	+10	+6
33	47	37	13	46	26	31	-1	-11	+18
34	57	33	17	47	32	19	-10	-1	+2
35	56	56	21	54	49	28	-2	-7	+7
43	44	38	27	41	37	24	-3	-1	-3
45	43	45	21	46	42	21	+3	-3	0
51	53	56	19	46	43	16	-7	-13	-5
54	53	50	24	50	37	19	-3	-13	-5
56	53	48	20	46	38	22	-7	-10	+2

TABLE 89. Continued.

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
63	45	48	22	45	49	18	0	+1	-4
68	54	42	23	45	35	24	-9	-7	+1
70	50	31	23	43	31	28	-7	0	+5
75	52	38	19	46	46	26	-6	+8	+7
TOTAL	1337	1262	553	1201	1087	617	-136	-175	66
MEAN	49.52	46.74	20.48	44.48	40.26	20.85	-5.04	-6.48	2.44

TABLE 90

SCORES FOR STUDENTS IN GROUP$_{112}$ (PASS-WHITE-FEMALE)
ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
05	48	53	23	25	35	14	-23	-18	-9
23	53	50	17	45	48	22	-8	-2	+5
25	48	53	21	44	33	30	-4	-20	+9
31	51	56	30	47	54	28	-4	-2	-2
42	54	39	20	48	32	30	-6	-7	+10
46	49	47	18	46	46	17	-3	-1	-1
53	51	52	26	48	33	27	-3	-19	+1
61	51	46	22	49	40	26	-2	-6	+4
TOTAL	405	396	177	352	321	194	-53	-75	+17
MEAN	50.63	49.50	22.13	44.00	40.13	24.25	-6.63	-9.38	2.13

TABLE 91

SCORES FOR STUDENTS IN GROUP$_{122}$ (PASS-NEGRO-FEMALE)
ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
65	50	53	13	45	52	23	-5	-1	+10
79	53	65	28	51	48	28	-2	-17	0
TOTAL	103	118	41	96	100	51	-7	-18	+10
MEAN	15.00	59.00	20.50	48.00	50.00	25.50	-3.50	-9.00	5.00

TABLE 92

SCORES FOR STUDENTS IN $GROUP_{121}$ (PASS-NEGRO-MALE)
ON THE THREE ROTATED FACTORS FOR T_1, T_2 AND THEIR DIFFERENCE SCORE (D)

STUDENT	T_1 FACTOR SCORES			T_2 FACTOR SCORES			D		
	I	II	III	I	II	III	I	II	III
41	48	44	28	47	52	21	-1	+8	-7
39	53	54	27	47	40	27	-6	-14	0
TOTAL	101	98	55	94	92	48	-7	-6	-7
MEAN	50.50	49.00	27.50	47.00	46.00	24.00	-3.50	-3.00	-3.50

APPENDIX L

THE COLLEGE ATTITUDE SCALE

1. I have had an opportunity to talk to people who know a lot about my chosen vocation.
2. Employers are always more interested in a college graduate.
3. It is difficult to get a good job without a college education.
4. If I want to be able to buy anything I want I have to get a college education.
5. To be a success I must get a college education.
6. College helps you decide what vocational goal you should pursue.
7. My vocational goals are well defined at the present time.
8. I know I am capable of earning much better grades than I did in high school.
9. I know a great deal about my chosen vocation.
10. A college education will give me an opportunity for advancement.
11. I need to know more about my chosen vocation.
12. To live comfortably I need a college education.
13. My future earning power is dependent on my getting a college education.
14. People think better of you if you have a college education.
15. I need to know if I have the ability to succeed in my chosen vocation.
16. No matter how difficult the work is if I just try I can succeed in college.
17. I know exactly what I want to study in college.
18. If I just apply myself I will make good grades in college.
19. I am certain of the type of work in which I will be engaged ten years from now.
20. I know the academic requirements necessary for my chosen vocation.
21. To earn a college education is the only way I can prepare myself for employment.
22. People who have a college education make the most money.

23. To earn an adequate salary I must get a college education.

24. It is difficult to be accepted in the community without a college education.

25. My success in college is dependent on my ability to study hard.

26. I would like to talk to someone about my chosen vocation.

27. If given the opportunity I can get a college education.

28. I have a good understanding of my vocational interests.

29. A future employer will look unfavorably on me if I do not have a college education.

30. I will not be able to earn a good living if I do not get a college education.

31. My future is dependent on my getting a college education.

32. The only way in which I can be successful in my future job is to get a college education.

33. I am capable of succeeding in several vocations.

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BIOGRAPHICAL SKETCH

The writer, George Monroe Barton, was born November 24, 1931, at Miami, Florida. In June, 1949, he was graduated from Miami Edison High School. From that time until 1952, he attended the University of Florida. In 1952, he entered the United States Navy and was discharged in 1954. In June, 1957, he received the degree of Bachelor of Science from Florida Southern College. From 1958 to 1960, the writer taught mathematics at Westwood Junior High School. He received his Master of Education degree from the University of Florida in August, 1960. During 1960-61, the writer was an instructor in industrial arts at the University of Florida. In September, 1961, he began his work for the doctorate in educational psychology at the University of Florida. From 1962 until 1965, the writer was Director of Student Personnel at the Daytona Beach Junior College. From 1965 to the present he has served as Junior College Program Director at Educational Testing Service.

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March, 1968

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